Workshop on

Energy and Rural Development

Workshop Report and Proceedings

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The Workshop on Energy and Rural Development was co-ordinated by the Energy & Development Group on behalf of the Department of Mineral and Energy Affairs (DMEA): Energy Directorate.

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EXECUTIVE SUMMARY

INTRODUCTION

The Workshop on Energy for Rural Development was held on behalf of the Department of Mineral and Energy Affairs: Energy Directorate, and took place in March 1995. The overall purpose of the workshop was to facilitate rural development, focussing on the energy sector.

Objectives

The primary objectives of the workshop were:

- to establish a rural energy policy which supports rural development needs effectively,
- to establish implementation mechanisms and responsibilities such that implementation is facilitated,
- to identify and prioritise research programmes to support policy formulation, and
- to identify actions necessary to take the workshop conclusions further.

Participation

The workshop included representatives from energy suppliers, researchers, development organisations and state bodies, as well as a significant number of people from rural NGOs and community organisations. Substantial preparation work was undertaken to ensure that all those present would be able to participate in the event. This included the production of pre-workshop papers on relevant energy themes, and the holding of a pre-workshop 'induction' meeting for participants without an energy-specific background.

WORKSHOP OUTPUTS

The key outputs of the workshop in terms of the above objectives are summarised in the box on the following page.

Resolutions made during the event on how to take the workshop conclusions forward, and responsibility for implementing these resolutions, are presented after the summary of key outputs.

KEY OUTPUTS

Policy development

The establishment of a **National Energy Policy Forum** should be seriously considered. Such a body could address the following key issues:

- ensure that rural womens' interests are adequately considered in policies
- provide linkages between central policy makers and communities
- coordinate policy making amongst different organisations

Policy strategy implementation

- **Decentralisation of energy functions** to provincial and local government levels is essential for effective planning and implementation, and for participation at community level.
- **Integrated Energy Planning** approaches need to be pursued seriously, and responsibility for this firmly located in a clear organisational framework.
- **Capacity building** in energy matters at provincial, local government, and community levels is a critical part of decentralisation.

Priority policy issues

- Improving **access to woodfuel** by women
- Ensuring access to **minimum energy** needs by households (energy security)
- Developing energy strategies to support **economic development** in rural areas
- Encouraging **labour-intensive** approaches to energy infrastructure development (e.g. use of local labour in electrification)
- Improving **access to diesel** by small farmers

Research coordination

Research needs to be more coordinated than is currently the case, and responsibility for this coordination located with a suitable organisation.

Research approach

- Research involving communities should **impact positively** on the lives of those being researched. It involves an interaction which carries certain responsibilities in terms of building capacity both by providing information to, and developing skills in, the affected community.
- Funders should **provide resources for capacity building and feedback** during research projects.

Priority research themes

- Implementation strategy to ensure **access to a minimum level of energy** by households
- Establishing energy's role in the provision of a minimum level of **water supply**
- **Distribution and financing** of fuels and appliances in remote areas
- Appropriate **institutional links** between central government and community levels for effective energy service delivery
- Implementation of appropriate **capacity building** programmes at provincial, local government and community levels
- Energy requirements of **small businesses**
- Improving access to energy by **small farmers**
- **coordination and implementation of IEP** at a national, provincial and local level

RESOLUTIONS ON 'THE WAY FORWARD'

The following resolutions were made at the workshop on tasks to take the workshop proceedings forward:

Workshop feedback assistance

Task: Production and dissemination of some form of pamphlet to assist the rural representatives at the workshop in providing feedback from the workshop to their communities.

Responsibility: DMEA

Workshop proceedings

Task: Provide all workshop participants with a copy of the workshop proceedings.

Responsibility: EDG

Energy Policy Green Paper consultation process involving workshop participants

Task: Send all participants relevant parts of the Energy Policy Green Paper

Responsibility: DMEA

General Green Paper consultation process

Task: Conduct a consultation process which is as inclusive as possible (the mechanism by which this would happen was not decided upon)

Responsibility: DMEA, in conjunction with the Minerals and Energy Policy Centre (MEPC) and EDRC

Linking with provinces regarding energy planning and IEP pilot project implementation

Task: Encouraging provinces to integrate energy into development planning, and exploring the potential to conduct IEP projects in parallel with land reform projects.

Responsibility: (although responsibility was not assigned during the workshop, it would make sense for the DMEA to pursue this, but also to draw in Eskom and the oil companies)

Broader feedback process

Task: A broad information dissemination process reaching considerably further than the workshop participants. Workshop conclusions and relevant parts of the Energy Policy Green Paper should be covered.

Responsibility: Women's caucus representatives (Ilne Hofmeyr, Yvonne Pati, Marlett Wentzel) to take further.

ACKNOWLEDGEMENTS

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The main workshop facilitators were Fiona Archer and Julian May. Their efforts are greatly appreciated.

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Thanks to Michelle Nel for taking notes during the workshop open sessions.

We are grateful to all those that attended the event. The presence of participants from rural areas was particularly valuable, many of whom travelled from remote corners of the country to attend. DMEA covered their transport costs.

DMEA funded the workshop project. Tony Golding of the DMEA is thanked in particular for his support throughout the project, and for his comments on this report.

Finally, thanks to Progreen for organising the workshop successfully (Jeunesse Searll and Fiona Reed).

ABBREVIATIONS

CBO	community-based organisation
DBSA	Development Bank of South Africa
DMEA	Department of Mineral and Energy Affairs
DWAF	Department of Water Affairs and Forestry
EDG	Energy & Development Group (consultants undertaking the workshop coordination)
EDRC	Energy for Development Research Centre (research centre at the University of Cape Town)
EPC	Energy Portfolio Committee (parliamentary standing committee on energy)
ESI	electricity supply industry (Eskom, municipal electricity suppliers etc.)
IDT	Independent Development Trust (development funder)
LAPC	Land and Agricultural Policy Centre (research centre)
LDF	local development fora
LPG	liquid petroleum gas (household gas)
MEC	Member of Executive Council (provincial-level departmental representative)
MEPC	Mineral and Energy Policy Centre (policy development and research centre)
NELF	National Electrification Forum (representative forum developing electrification policy options)
NEPF	National Energy Policy Forum (proposed energy policy making forum)
NERC	National Energy Research Council (proposed energy research coordinating body)
NGO	non-governmental organisation
PLP	Presidential Lead Projects (special projects within the RDP)
PPF	Project Preparation Facility (a facility offered by the RDP offices)
PV	Photovoltaics (usually referring to solar electricity generation)
RAFINCO	(see SAFIRE)
RDC	Reconstruction and Development Councils (local-level RDP structure)
RDP	Reconstruction and Development Programme
RDTT	Rural Development Task Team (an RDP substructure focusing on rural areas)
RE	rural electrification
RLG	rural local government
SAFIRE	South African Financing Institution for Renewable Energy (proposed name, others are SAREDA or RAFINCO).
SAREDA	(see SAFIRE)
UNDP	United Nations Development Programme
WEG	Womens' Energy Group

CONTENTS

CHAPTER 1: INTRODUCTION

Background

South Africa is currently devoting substantial resources to the meeting of basic needs and the development of previously neglected sectors such as rural areas. This is largely being undertaken through the Reconstruction and Development Programme. The *Workshop on Energy for Rural Development* was intended to contribute towards rural development by focusing on the development and implementation of energy policy to meet rural communities' needs. Research programmes also needed to be identified and prioritised to support policy development. Although much work has been undertaken, and is currently being done on different aspects of rural energy in relation to development, this has to date not been adequately co-ordinated with a view to developing an integrated national rural energy policy and facilitating effective delivery. The workshop was intended to be a step towards improving this situation.

A noteworthy feature of the workshop was the mix of participants. Not only were researchers, suppliers, development organisations and state bodies represented, but a significant number of people from rural NGOs[1] and CBOs[2] also attended the workshop. This provided the opportunity for all affected groupings to be involved in formulating the way forward. It also allowed a measure of communication between rural groups and government departments and other institutions to take place directly, which is not a common occurrence. The workshop also resulted in a measure of capacity building for many participants by including them in this process.

Another aspect of the workshop which is worth noting, was the emphasis given to pre-workshop activities. Substantial resources were allocated to the preparation of pre-workshop papers and the involvement of key players in commenting on the workshop structure. This preparatory work was considered necessary if the workshop was to be as productive as possible.

Workshop objectives

The overarching purpose of the workshop was to facilitate rural development, focussing on the energy sector. The primary objectives of the workshop may broadly be described as follows:

1 to establish a rural energy policy which supports rural development needs effectively,
2 to establish implementation mechanisms and responsibilities such that implementation is facilitated,
3 to identify and prioritise research programmes to support policy formulation, and
4 to identify actions necessary to take the workshop conclusions further.

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1 NGO - non-governmental organisation

2 CBO - community-based organisation

The specific objectives of different sections of the workshop which led towards the fulfilling of the primary objectives are given below:

Energy and rural development
i) To identify energy priorities for rural development

Energy policy development and implementation
i) To identify problems in the policy formulation and implementation planning processes, and to determine measures to address these problems.
ii) To identify probable energy policy and strategies, assess whether these adequately address the needs in rural areas, and if not, to make suggestions as to how these should be addressed.
iii) To develop an institutional framework for rural energy provision.

Energy research
i) To identify and categorise rural research priorities to support policy formulation.
ii) To identify principles for undertaking research - a code of ethics.
iii) To identify appropriate research methodologies.
iv) To develop a framework to coordinate research planning.
v) To identify ways to of improving the current process for research prioritisation and funding, and
vi) To develop a process for evaluating research proposals and outputs.

The way forward
To develop an appropriate way forward from the workshop, considering:
i) Improved integration between energy and other sectors involved in rural development,
ii) Improved links between rural end-users, CBOs, suppliers, researchers and policy-makers,
iii) Dissemination of workshop conclusions, and
iv) Obtaining feedback on workshop conclusions from a wider spectrum of organisations and individuals.

Expectations

The expectations of particularly the rural representatives attending the workshop, who should be considered as one of the client groups of the workshop, are important to consider, and also reflect to some extent the priority needs in rural areas. These expectations arose mainly out of the pre-workshop 'induction meeting', and are summarised below.

General hopes expressed by community participants were that the workshop would lead to rural energy problems being addressed in a meaningful way. They hoped that they would gain an increased understanding of energy issues, and would be able to communicate and act on what they learnt to improve the situation in their communities.

It was hoped that the workshop would lead to:
- Rural areas becoming a specific area of focus for relevant energy institutions,
- The establishment of a clear mechanism for policy input from local to national level,
- Women having a role in the National Energy Policy Forum (NEPF) (this was taken further in an informal women's caucus meeting held during the workshop),
- Energy extension officers being deployed in rural areas, and technical support being made available to existing energy committees,
- Facilitation mechanisms for the establishment of local energy committees, including an established system for access to information by such committees,

- Biomass being made a particular focus, through increased funding for social forestry programmes, and
- Development of Integrated Energy Planning (IEP) methods appropriate to the South African context, which are in particular, 'women friendly'.

Community participants suggested that:

- Similar workshops could be held at provincial level to increase energy awareness at the provincial and local level,
- A committee be established from this workshop to facilitate the implementation of some of the above points (this is further discussed at the end of the section in titled *'The way forward'* in this chapter).

Workshop organisational process

After submitting a draft framework for the workshop to the Department of Mineral and Energy Affairs (DMEA), the Energy & Development Group (EDG) was appointed to undertake the workshop coordination. EDG therefore carried primarily responsibility for organising the workshop and producing the post-workshop report.

To ensure that the workshop achieved as much as possible, extensive planning and preparatory work was undertaken. Some of the main features of the pre-workshop activities are discussed below.

Establishment of the steering committee

A steering committee (steercom) was established to assist in workshop planning and organisation. The steercom comprised four persons in addition to two EDG project staff, who collectively had substantial experience in energy and rural development as well as familiarity with organising similar workshops. The tasks of the steercom included (i) determining workshop structure, (ii) pre-workshop paper design and production (see later), (iii) participant identification, (iv) pre-workshop 'induction meeting' involvement (see later), (v) note-taking during the workshop, and (vi) commenting on the post-workshop document. The steercom also identified suitable conference organisers. In addition, a steercom member acted as one of two principal facilitators during the workshop.

Meeting of the Reference Group

A meeting of key stakeholders in the energy and development sector (called the 'Reference Group' in this document) was convened during the workshop planning phase. This group comprised representatives from the Department of Mineral and Energy Affairs (DMEA), the Development Bank of South Africa (DBSA), the Land and Agricultural Policy Centre (LAPC), the Mineral and Energy Policy Centre (MEPC), the Energy for Development Research Centre (EDRC) and the Department of Housing. The draft workshop structure, pre-workshop paper content and preliminary participant list was presented to them so they could assess to what extent the workshop was likely meet the needs of their organisations, and so that modifications could be made at an early stage to ensure that the workshop outputs would be useful to them.

Commissioning the conference organisers

A conference organising body, Progreen, was commissioned by EDG to undertake conference organising and administration tasks.

Pre-workshop information synthesis

In order to achieve the objectives of the workshop, it was considered necessary to undertake preparatory work in order to develop suggestions with which the participants could work during the sessions. Various steercom members were assigned to undertake various parts of this work, and to produce pre-workshop papers to report these suggestions together with some background information. The purpose of these papers was also broader than this, and their functions may be summarised as follows:

- To provide information on energy and rural development policy and energy research for participants without an energy background.
- To provide information on the existing energy situation so that the time spent covering old ground at the workshop could be minimised.
- To produce a firm set of proposals regarding energy and rural development policy and research which would prepare all participants for the issues to be addressed at the workshop, and which would be used as the starting point for debate at the workshop sessions.

It was intended that the papers would be read by all participants before the workshop. These papers played a potentially important part in the workshop process, as it was hoped that they would not only give all participants a certain degree of common knowledge base, but would produce a set of suggestions which would form the core of the workshop discussions. As the development of meaningful and specific policies and strategies requires careful preparation, it was not considered realistic to expect the participants to produce these in the brief time available during the workshop sessions. It was, however, considered manageable for them to comment on and modify an already prepared set of suggestions.

It was realised from the start that papers 1, 2 and 3 were particularly difficult to write. Not only did they needed to cater for an audience coming from an extremely diverse range of backgrounds, but they needed to go as far as suggesting policies, institutional frameworks and other courses of action to address the energy needs of rural development. In addition, they needed to be short enough for all participants to read them easily before the workshop. Their success in meeting these objectives is discussed in the '*Evaluation*' section of this report.

The pre-workshop paper coverage was as follows:

PAPER 1: The status of the rural energy sector and its links to rural development
Provides an overview of energy's role in rural areas, current problems experienced by users, and suggests policies and strategies to improve rural energy supply.

PAPER 2: From policy to implementation: process and pitfalls
Isolates problems regarding the formulation of policies and plans and their implementation, and suggests strategies to address the problems.

PAPER 3: The status of the energy and rural development research sector
Suggests guiding principles for research in rural areas, discusses appropriate research methodologies, suggests research priorities to feed into policy formulation and implementation, and identifies the role of research institutions and shortcomings in their functioning.

In addition to the three core papers above, the following papers were also produced:

PAPER 4: The RDP policy with respect to rural development and energy (submitted by the RDP office)
To assist in contextualising the role of energy in meeting the aims of the RDP.

PAPER 5: *Some ideas on the way forward*
Suggested ways of taking the workshop forward to maximise its impact.

All the papers were sent to participants at least ten days before the workshop, although not all participants received them in time.

The pre-workshop induction meeting

An induction session was held on the afternoon prior to the workshop introductory session. The purpose of this session was to provide background information on relevant energy topics to participants without an energy-specific background, so that they could participate more fully in the workshop process. Attendance included participants from CBOs and NGOs, as well as persons from state and other organisations not directly involved in energy matters.

The meeting covered an overview of the energy sector, including the structure of the energy supply industry and government bodies, and a description of how energy policy is developed and implemented. Areas where inputs from rural representatives were particularly necessary during the workshop were also discussed.

The role of presentations in the workshop

The intention was that the presentations should summarise key aspects of the pre-workshop papers as a reminder to participants, and then, using the pre-workshop papers as a basis, focus on a firm set of suggestions to provide the starting point for discussion.

Participants & participatory process

It was the intention of the workshop organisers to invite a broad spectrum of participants to allow all relevant players to be involved in formulating the way forward, and to allow communication between rural groups, government departments and other institutions to take place directly. At the same time it was decided to keep the numbers down to a manageable size, and therefore careful choice of participants was essential. Sectors invited included: rural development agencies and funders, energy and rural development researchers, the energy supply sector, the RDP, other government sectors including water, forestry, agriculture, housing and health, as well as representation from NGOs and CBOs involved in rural development. Observers from the World Bank and UNDP, and a Weekly Mail journalist were also invited, but did not attend.

Participants were chosen by the steering committee, and it was decided to invite specific individuals rather than organisations where possible. Suggestions concerning suitable participants were also made by the Reference Group and by the Womans' Energy Group. An effort was made to balance the number of participants from each sector, and in particular to ensure that the rural end-user representation would be significant. An effort was also made to balance the geographical coverage and to ensure that both sexes were equally represented. The workshop also intended to provide a measure of capacity building for participants.

The overall workshop attendance was eventually relatively well balanced, although considerable effort was needed to ensure that the rural sector in particular was adequately represented. On the whole, contributions to discussion by the various sectors during the workshop process was also balanced.

Final participation by sector:

development agencies and funders		5
energy and rural development researchers		17
energy supply sector		4
Government		13
DMEA	*6*	
other government ministries and departments	*3*	
RDP	*4*	
NGOs and CBOs		21
EDG, conference organisers & other		5
TOTAL		**65**

Report structure

CHAPTER 2: Key Outputs - contains the most important outputs from the workshop, which are extracted from the *'Workshop Proceedings'* in Appendix A. This section includes all outputs requiring attention by policy makers and research-related organisations.

CHAPTER 3: Evaluation - the evaluation of the workshop event, as undertaken by both participants and the workshop coordinators, is presented here.

Appendix A: Workshop proceedings - details of participant contributions during the workshop event may be found in this section.

Appendix B: Pre-workshop papers - the papers which were prepared and circulated before the workshop event are presented here.

Appendix C: Final participant list - list of names and addresses of workshop participants.

CHAPTER 2: KEY OUTPUTS

This section is based on the '*Workshop Proceedings*' section found in 'appendix A' of this document, and extracts aspects which are considered to be the most important inputs into the energy policy and research themes and processes. Emphasis has been placed on aspects which are seen as being currently inadequately addressed, or those on which a particularly strong emphasis was placed by participants. While it is hoped that this section covers all workshop outputs requiring attention by policy makers and researchers, it is essentially a summary by the authors, and the '*Workshop Proceedings*' section will generally provide a more detailed reflection of participant views.

Energy priorities for rural development

Energy security

The State should ensure that a basic level of energy is accessible to all households.

Possibly one of the most important concepts to be raised during the workshop was that regarding energy security, i.e. ensuring that a basic level of energy provision is accessible to all households. This arose directly from what were perceived by workshop participants as amongst the most critical problems regarding energy in rural areas (e.g. some people cannot obtain energy for cooking and so go hungry; the old and infirm in particular suffer, as they cannot collect wood for themselves, nor have the funds to pay others to do it for them or to buy commercial fuels).

Energy is fundamental to cooking and hygiene, through water supply, for example, and is therefore an important contributor to basic welfare and therefore may be considered a 'right' of all people. Energy is not a basic need in itself, but the end-uses and the services it provides often meet basic needs, without which life can not been sustained. To illustrate this, it is not enough to say that the basic food needs of a household are met *without* ensuring that they have the necessary energy to cook the food. Similarly, it may not be possible to meet a household's basic water needs without using energy to pump the necessary water.

It was therefore strongly suggested that the state needs to take responsibility for ensuring that basic energy needs are met (implying a greater degree of government intervention in certain areas of energy supply).

Women

Serious efforts should be made to address the welfare of women in rural areas via improved energy supply.

Women bear the brunt of hardships in rural areas, and there was broad support for the need to improve their situation. Women generally do not have time to collect wood or water, but they have no choice, and may have to sacrifice involvement in productive activities or potential leisure time to undertake

these tasks, or use their children to perform these tasks, which can result in their missing school. The opportunity cost to the national economy of committing so much time to these tasks is likely to be substantial. The effect of the demands of rural life on women's health was also noted.

Stimulating the rural economy

Energy supply strategies should focus on stimulating productive activities, in addition to meeting basic needs.

The potential importance of energy's contribution to increasing income and employment levels in rural areas through stimulating productive activities is an essential component of rural development strategies and policies. Not only does the financial sustainability of energy supply require that users have a certain level of disposable income to pay for these services, but the effective use of energy also requires a certain income level which is usually non-existent (e.g. to buy appliances). This reinforces the need for energy supply to be linked to stimulating productive activities and thus employment creation.

Stimulation of income generation should however not compromise welfare. The example was given where the encouraging of cash crop cultivation led to reduced household vegetable growing, and the cash generated was spent by men on luxury items. Malnutrition resulted. Creating income does thus not necessarily mean empowering of women nor the reduction of their burdens.

While focusing on the stimulation of productive activities, we should also bear in mind that the income needs to remain in the rural areas if true rural development is to occur.

Need to consider broad range of fuels

Although the emphasis in debates on rural energy provision is often placed on electricity supply, it must be remembered that other fuels will continue to play an important role in rural areas (paraffin, LPG/gas, wood). These energy sources therefore need to be given due consideration in energy policies.

POLICY

Framework for policy development & advocacy

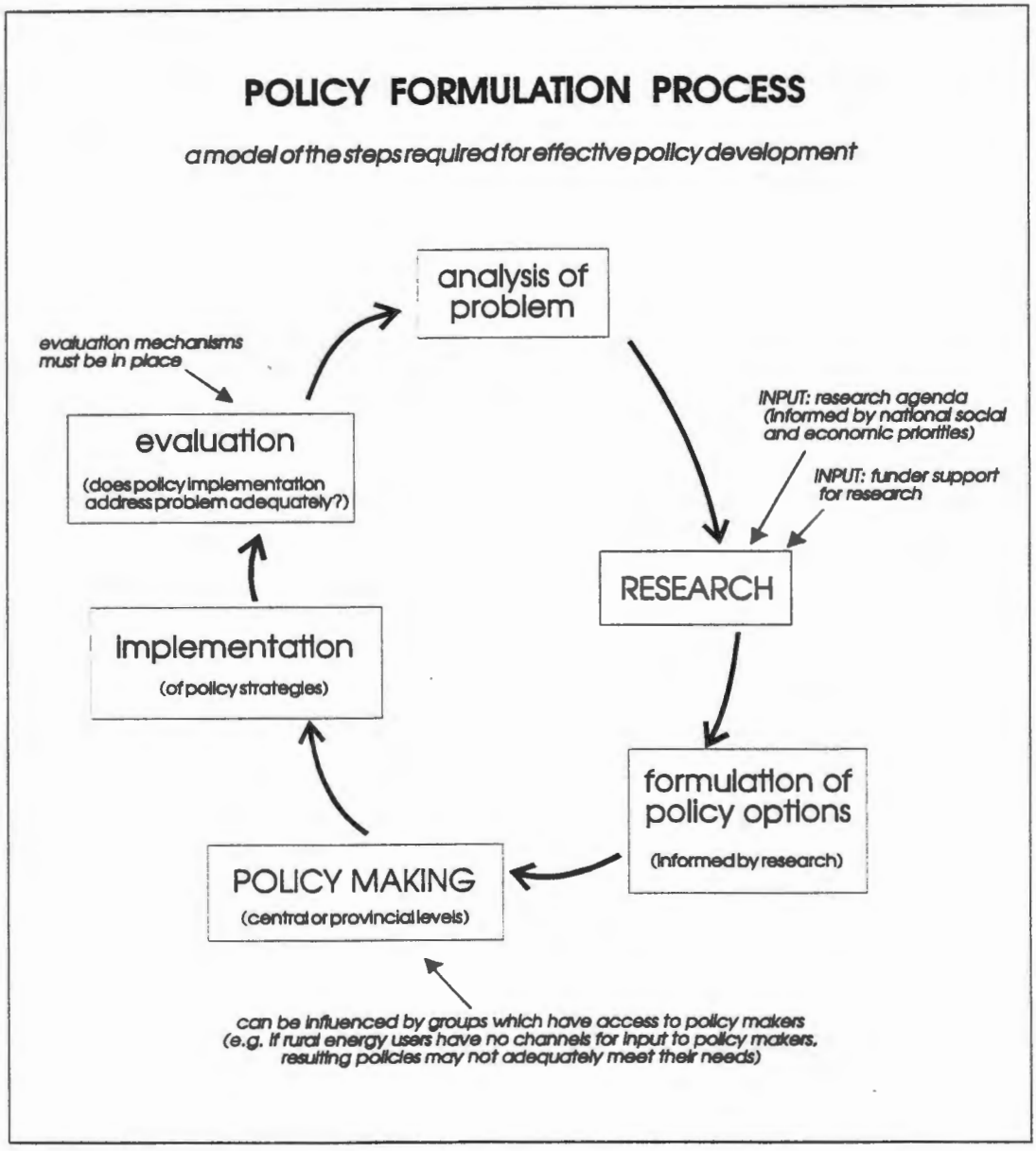
Problems/Needs

Main problems in policy development:
- *lack of **coordination** amongst policy makers*
- *lack of **rural energy user input** in process*

The following issues regarding the energy policy development process were considered to be most urgently in need of attention:

(i) There is a need for coordination (thus far several different groups have been involved in developing policy for different energy sub-sectors)

(ii) Their is a lack of representation in the process by those affected by the policies - in this case rural energy-users (public policy making such as there has been has historically taken place largely within the nationally-centralised department).



Process strategies proposed

- *The establishment of a **National Energy Policy Forum** should be seriously considered.*
- ***Capacity building** of communities and local government in energy matters is critical.*
- ***Provincial Energy Directorate** representation should be established*

The following measures should be considered to address the problems raised:

- The formation of a National Energy Policy Forum (NEPF) should be seriously considered to coordinate policy development. The NEPF would provide a forum where rural end-user and provincial interests would be represented. The need for a dedicated rural energy policy focus in such a forum was stressed, as the danger exists that rural issues may be 'submerged by the concerns of the large energy industries'.
- Capacity building of local government and community fora in energy matters[3] is needed to enable rural participation in the policy development process and to adequately represent rural interests.
- Provincial Energy Departments, or provincial offices of the DMEA Energy Directorate need to be established to provide a link between the centrally-located and local organisations[4].

It is not surprising that capacity building arises as a central component of a more participatory policy process. The urgent need to address the lack of capacity in communities, local government, and at a provincial level was stressed continually throughout the workshop, and will need to be seriously considered by the DMEA. It should be noted that capacity building is also a major focus of the RDP, and therefore resources for this are likely to be available through RDP channels.

Policy monitoring

An important part of policy development is the monitoring of the effectiveness of policies implemented to ensure that the desired results are being achieved. Policy making should not be seen as a once-off process, but a continual moving towards the optimisation of policies and strategies over time.

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3 the nature of appropriate capacity building would need to be determined, but could include increasing awareness of energy issues in general (including organisations active in this field), or more technical matters.

4 the appropriate range of responsibilities of such offices needs further examination, although they would probably need to be more implementation oriented than the central DMEA office currently is. The basic function of such offices in providing a link between central and local level operations is likely to be critical to the development and support of energy capacity on a broad scale. They would at least need to provide information to, and facilitate technical support for local initiatives, and represent local needs to central government. Without provincial level offices performing these functions, the potential for meaningful impact on energy problems in rural areas is likely to be substantially reduced. Who should establish these offices? - it seems inevitable that DMEA would need to play a leading role in this regard.

Policy gaps and options

Priority policy issues

Summary:

1. *Improving **access to woodfuel** by women*
2. *Ensuring access to **minimum energy** needs (energy security)*
3. *Developing energy strategies to support **economic development***
4. *Encouraging **labour-intensive** approaches to energy infrastructure development*
5. *Improving **access to diesel** by small farmers*

The following issues were considered priorities by participants:

1 *Women and woodgathering* - as women are often burdened with woodgathering tasks, it is particularly important to focus on facilitating improved access to wood in addressing their welfare. However, social forestry strategies need to be flexible and should beware of placing an added burden on, or marginalising, women with no land, water or time to grow trees.

2 *Energy security* - a strategy needs to be developed to ensure secure access to a minimum level of energy services for all households, i.e. energy must be considered amongst the basic needs required to sustain livelihoods. It is important that this is applied in conjunction with an economic development strategy.

3 *Energy to stimulate economic development* - it is critical that energy strategies support economic development in rural areas if development in these areas is to be sustainable.

4 *Labour-intensive energy provision* - the increased use of labour in the provision of energy supply infrastructure should be given priority. With electrification, in particular, the potential exists to increase the use of local labour significantly and possibly realise a reduction in supply costs at the same time. Given the potential benefits, such as local capacity building, local employment and cheaper supply, this approach should surely be further explored without delay.

5 *Small-scale farming* - assistance for small-scale farmers in accessing diesel is seen as requiring immediate attention. Such support will be necessary for a 'vibrant and expanding rural economy'.

Other policy issues

In this section, policy issues which have already been explored in other projects or are currently under investigation, or which are not core themes, are listed.

Biomass - sustainability of the resource base and ownership and improved access to the country's surplus wood resources - e.g. private forests, surplus wood on farmlands, and commercial forestry wastes.

Energy and health - policy should address energy-related health problems - e.g. legislation on the type of containers in which paraffin can be sold, improved woodstoves to reduce exposure to smoke in the home.

Limited rural electrification - policies should promote technologies to provide low-cost electricity supply for limited applications - e.g. lighting and media.

Access to finances - adequate financing is currently a constraint on the procurement of adequate and appropriate energy supplies or technologies in rural areas, e.g. SAREDA[5] (see later) is being established specifically to address this issue, although it will initially only focus on solar photovoltaics (PV).

Private sector involvement in rural energy provision - it may be feasible for the state to provide incentives for the private sector to become more actively involved in rural energy supply[6].

Rural energy supply small businesses - as a move to stimulating the rural economy, facilitating local business development around energy provision could be encouraged where feasible.

Institutional framework for rural energy provision

Decentralization

*Decentralization of energy functions to provincial and local levels is important if **users are to be included** in the policy making and implementation processes.*

Decentralization of energy competencies was seen as essential if policy making and implementation are to become more user-driven processes, as the current nationally-centralised responsibility for energy is considered very limiting. It is therefore suggested that:

- Provincial, local government and community (CBO) capacities with respect to energy are developed such that they may make informed decisions.
- Responsibilities of these structures with respect to energy are clarified, and a clear framework for expressing needs and implementing policies is developed.

5 South African Renewable Energy Dissemination Agency - a renewable energy implementation agency to mobilise funds, manage revolving credit fund, set specifications, provide project management services, plan energy projects, handle consumer education & arrange for maintenance services

6 as raised during the workshop, this idea needs elaboration and raises various questions. Any private sector involvement is only likely to be sustainable where there is an adequate market for their products (unless subsidized supply is being considered). It is nevertheless likely that the private sector has not adequately tapped into the existing market - for example, it has been demonstrated in the Umvoti Valley Integrated Energy Planning Project (a combined project involving the DMEA) that sufficient paraffin demand exists for the establishment of a bulk tank to be financially feasible, but the private sector was unaware of this. A logical starting point in encouraging further private sector involvement in rural energy supply (paraffin in this case) may be to ensure that they are covering all financially feasible areas.

Provincial energy representation

Provincial offices of the DMEA Energy Directorate need to be established. Energy Directorate representatives should have sufficient autonomy, and should focus on energy issues only (rather than have responsibilities covering mining issues as well, for example).

Important considerations regarding the critical role of provincial energy representatives raised in the workshop are given below:

- Provincial representatives of the DMEA should have enough autonomy to be effective.
- Provincial representatives should have energy as their priority - officials should therefore probably not be located within the provincial Minerals Offices or other provincial departments to the detriment of energy affairs[7].
- Delivery-related structures such as SAREDA should have provincial representation or links.

In addition to provincial energy functions, it may be necessary to have energy planning offices at a sub-regional level if effective links to local government are to be established.

Rural local government (RLG)

Effective RLG is essential to link communities and provincial structures.

RLG is an essential link in the institutional framework, as it is the principal channel for routing community needs to provincial authorities and for channeling implementation resources to communities. As it is desirable to have decisions concerning resource application being made as locally as possible, it may be necessary to increase the powers of RLG with respect to intergovernmental transfers such that they can direct resources appropriately.

Community organisations (CBOs)

CBOs must be representative of communities to be officially recognised, and should include at least 40% women on decision-making committees.

It should be ensured that representation on CBO committees and boards is representative, and includes women, youth, the elderly and the disabled. It was proposed that a stipulation be made that, for official recognition, at least 40% of committee members must be women[8]. The link between local government

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7 Minerals Affairs Offices are in any case not present in all provinces, and the activities of an Energy Office would be substantially different to those of a Minerals Office. Thus combining these functions as occurs in the central DMEA office may not be advisable on a provincial level.

8 it is interesting that the Natural Resource Management Workshop held by the LAPC in fact cautioned against regarding communities as beneficiaries of development, as they are typically comprised of a diverse range of socio-economic strata with differing interests. Rather, households or individuals should be targeted as beneficiaries.

and CBOs is also an important one, and a mechanism should be established to ensure that CBOs are adequately represented in local government[9].

Framework for Integrated Energy Planning (IEP)

If IEP is to be implemented, responsibility needs to be firmly located in a clear organisational framework.

If IEP[10] is to be undertaken seriously, it should be located within a firmly-established organisational framework which coordinates the activities of different national and provincial departments. The provincial departments need to include energy on their agendas, and this may be best achieved by assigning the responsibility for energy to specific persons within each relevant department. Initially, the Rural Development Task Team (RDTT) of the RDP Office will be well placed to undertake national IEP coordination, as it includes most of the relevant central government departments.

There is a need for IEP pilot projects to be undertaken. The following vehicles for such projects were suggested:

- Including IEP in appropriate Presidential Lead Projects.
- Including IEP in land reform pilot projects.

On a national and provincial level, the energy sector should consider becoming more involved in developments that have implications for energy services provision. For example, processes affecting national and provincial bodies and rural local government, such as the Fiscal and Financing Commission and the Provincial Affairs Committee should be tracked.

Specific strategies to improve energy planning and delivery

The following specific strategies arose out of the workshop as potential mechanisms to improve planning and implementation:

Rural cooperatives - carefully managed cooperatives which are run using community trust funds provide promising vehicles for distribution of fuels, electricity and appliances, and can have other significant developmental spinoffs (capacity building, employment, funds remaining in communities, etc). Such cooperatives could undertake direct negotiation with oil companies to improve diesel, LPG and paraffin supply.

Use of RDP structures to channel proposals - the RDP structures provide a potential conduit to DMEA for CBOs to access funding for projects. Their role is particularly important in the current absence of adequate local and provincial government structures.

Improved energy awareness within the RDP - as the RDP is one of the major implementing programmes at present, energy concerns should be integrated into RDP planning, and energy awareness raised amongst RDP staff at central and provincial government level.

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9 CBOs can have an important 'watchdog' role to ensure that local government performs effectively and is responsive to communities and households.

10 IEP is often used to refer to a specific methodology of energy planning. In this text it is used in a more general sense, and does not imply the use of any specific methodology.

Application of funding conditionalities - these could be applied to ensure that developmental objectives are achieved, that IEP is adequately applied, and that energy is integrated into the planning of other rural development initiatives. Useful tools may be the specification of funding conditions and the monitoring of project success.

Capacity building requirements

Capacity building at provincial, local government, and community levels is critical for improved delivery of energy services.

As in many other areas covered by the workshop, capacity building with regard to energy planning emerges as a critical area of concern - at central, provincial and local government levels, and most importantly within affected communities themselves. If communities are to be enabled to take their development into their own hands, information provision, training and extension services are definitely going to be necessary. Capacity building of all provincial departments that should be involved in IEP will also be necessary.

Some specific capacity building approaches include:

- To train and utilise organisations such as NGOs who already have some energy expertise.
- To train extension officers from other sectors (e.g. agriculture, health and forestry) in energy matters.
- The holding of training workshops for local leaders and communities.
- The establishment of community-based service centres could be a means for local extension provision or training, possibly in conjunction with local government.
- Incorporating energy-related training in school curricula.

Biomass

It is unclear where the responsibility for the biomass energy sector is best located, although the RDTT may provide a suitable home in the short-term.

There is some concern over the location of responsibility for the biomass energy sector (i.e. uncertainty as to whether responsibility for biomass-related energy matters should reside with the department of forestry, agriculture, nature conservation, or energy). The RDTT may be the sensible (if short-term) body to coordinate this sector, as it includes representation from relevant departments (experience in other developing countries would tend to indicate that a high degree of horizontal integration of this responsibility best helps to achieve the desired results).

RESEARCH

Principles and methodologies

Responsibilities of researchers

*Research involving communities should **impact positively** on the lives of those being researched. It should not be regarded as a neutral activity.*

Research involves an interaction which carries certain responsibilities in terms of building capacity both by providing information to, and developing skills in, the affected community. Communities must always be approached respectfully, and the research activities adequately discussed with and endorsed by them.

Researchers should:

- Explain the purpose of the research to those being researched, and have the activity endorsed by them. The quality of the research often depends to some extent on the exercise being understood by the subjects of the research.
- Maintain ongoing communication and feedback during the research process, including a final report-back on the findings. Feedback must be in an accessible format (if information pamphlets are provided, they should be translated into the local language), and should be budgeted for and included from the start as a part of the research exercise.
- It is often easy for researchers to provide general energy information useful to communities (not necessarily related to the project with which they are currently busy). Researchers should consider their potential role in capacity building via information provision during their involvement with communities.
- Communities should be involved in planning the research, and in prioritising research goals (where feasible).
- Community members should be used in research activities where possible (e.g. in conducting surveys). Training should be considered to enable them to become more actively involved. Women can be particularly useful in conducting research into energy-related matters, given their central role in its use in rural areas.

Implications for funders

Funders should provide resources for capacity building and feedback during research projects, and ensure that their research projects are undertaken in a responsible manner.

- Funders need to provide resources for capacity building and feedback to communities in projects which they support.
- Funders should ensure that researchers fulfill their responsibilities to those being researched by including the principles mentioned in their funding criteria.

Linking research and implementation

Implementation should follow research wherever possible - by linking research and implementation projects at the outset, or by researchers pursuing implementation needs that arise.

- Research usually raises expectations. Disappointment of communities can be avoided by keeping them well informed of the research findings and the potential for implementation (if any), including them in the research process, and by more actively pursuing implementation based on the research findings.
- Research projects should be linked to implementation where possible (e.g. have some commitment for funds to meet needs identified), and researchers should more actively pursue implementation where they identify areas of need.

Coordination of planning and implementation

The need for research coordination

Research needs to be more coordinated than is currently the case.

It seems that there is substantial consensus that research needs to be more coordinated than is currently the case, although the over-centralisation of research control may also not be desirable. The overall purpose of such coordination should be:

- To oversee the process of research prioritisation leading to research implementation.
- To coordinate different funders with respect to financing research within identified priority research areas and to avoid any duplication.
- To promote cooperation with the research establishments of other sectors, such as water, agriculture and health.
- To maintain an ongoing link between research and policy making (an essential process if research is to be effective).

More specific tasks which a coordinating body could usefully undertake include:

- Compilation and maintenance of a comprehensive and accessible database for research - there was wide consensus that such a database is an important step in national research coordination.
- Development of terms of reference as the basis for calling for tenders.
- Allocation of resources for research.
- Monitoring of research procedures, including capacity building and feedback aspects.
- Evaluation of research results.
- Undertaking and/or coordinating energy research capacity building - particularly of the traditionally black university research establishments.
- Improving general access to information generated by research.

Organisational responsibility for research coordination

The DMEA is probably best suited to undertake research coordination, although other bodies such as the proposed National Energy Policy Forum may also have a role to play.

The responsibility for coordination would need to rest with an organisation with the necessary capacity. The DMEA is probably the most likely candidate to fulfil such a function (due to its experience with research and its policy making function), although it would need increased capacity and a change in *modus operandi* regarding its involvement in research[11].

Other organisations which could fulfil this function or play a role in the coordination process include the proposed National Energy Policy Forum, the Parliamentary Minerals and Energy Portfolio Committee, or a suggested National Energy Research Council (see the '*Workshop Proceedings*' section for information on specific suggestions raised by participants).

Criteria for such a research coordinating body should include:
- Adequate representation of important stakeholders (rural communities, researchers and policy makers).
- It should be multi-disciplinary and non-implementing.
- at least 40% of decision-making committees or boards should be women.
- It must be transparent and accountable.

Research capacity building

Capacity building is necessary to broaden the energy research capacity, particularly amongst traditionally black universities.

The workshop noted that there are a limited number of organisations and persons currently involved in energy-related research, which sometimes leads to an unhealthy 'closed shop' situation. While this may be partly addressed by the establishment of a research coordinating body with adequate representation, a specific move to build the energy research capacity of the traditionally black universities in particular is considered necessary.

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11 increased capacity within DMEA is likely to be necessary if it is to become involved in research coordination tasks listed in the previous section: *'The need for research coordination'* (i.e. research database maintenance, increased research information dissemination, increased involvement in research monitoring, encouraging capacity building and feedback within research projects, involvement in research institution capacity building, etc.). Aside from the research function, increased capacity will certainly be necessary to support and coordinate the activities of several provincial offices, as workshop participants feel is necessary. Change in *modus operandi* is also implied in many of the tasks listed in the previous section, e.g. adopting a more active information dissemination role, increased capacity building focus etc.

Research priorities

Priority research themes

Summary of research priorities:

1 *implementation strategy to ensure* ***access to a minimum level of energy***
2 *establishing energy's role in the provision of a minimum level of* ***water supply***
3 ***distribution and financing*** *of fuels and appliances in remote areas*
4 *appropriate* ***institutional links*** *between central and community levels for effective delivery*
5 *implementation of appropriate* ***capacity building*** *programmes*
6 *energy requirements of* ***small businesses***
7 *improving access to energy by* ***small farmers***
8 ***coordination and implementation of IEP*** *at a national, provincial and local level*

The research themes listed below have been prioritised by the authors based on (i) the importance placed on them by workshop participants, and (ii) the extent to which they are not being addressed by any other programmes.

1 Energy security - background research should be undertaken to explore the feasibility and implementation of an energy security policy (ensuring access to a minimum level of energy services for all households). Links with basic needs such as food security also need to be explored.

2 Energy for water supply - energy's role in the supply of a minimum level of water needs to be researched, in keeping with the increased focus on improving access to potable water.

3 Distribution and delivery - research should address the lack of understanding on the distribution and financing of fuels and appliances for rural end-users. This prevents the formulation of appropriate policy to address problems such as affordability.

4 Institutional arrangements - the institutional requirements of and linkages between local government, local development fora, provincial offices and DMEA need to be explored and defined to ensure adequate communication between end-users and policy makers, suppliers and researchers, and to facilitate the implementation of policies.

5 Capacity building - Information and skills needed by communities to enable them to pursue energy issues need to be researched. The empowerment of women merits particular attention.

6 Energy needs of small businesses - energy strategies that will best contribute to the development of the rural economy should be explored.

7 Energy needs in small scale agriculture - research on improving access to important energy carriers for small farmers needs to be carried out. Access to diesel was raised as a particularly critical concern.

8 Integrated Energy Planning[12] - some important questions regarding IEP which need to be addressed are listed below:

- what is a suitable working definition of IEP?
- where should IEP be institutionalized at a national, provincial and local level so that it is effectively applied?
- what is a suitable implementation methodology for IEP on a local level?
- how should IEP be applied in ad-hoc energy or other projects (of which there are many)?

[12] although IEP this was not singled out as a research theme, the need to undertake work in this area was directly implied on several occasions during the workshop.

- how should IEP be coordinated and implemented at a national and provincial level (including coordination with other sectors such as housing and water)?

Research themes on which work has been undertaken or is planned

Financing - financing requirements and mechanisms for the dissemination of adequate and appropriate energy technologies in rural areas need to be understood (work on financing PV systems has been undertaken, and SAREDA will be involved in this area).

Institutional energy needs - energy needs of schools, clinics and other community institutions need to be explored (work in this area has been undertaken by IDT, EDG and EDRC).

Access to biomass resources - access in the commercial farming sector and state controlled conservation areas to surplus wood resources, for example, could be further explored, as could the optimisation of the use of existing resources (the Biomass Initiative is active in this area).

Other research themes

Research on research - the research process itself needs to be better understood with a view to improving the impact and efficiency of future research projects. Follow-up studies on the impact of research projects on the local culture and the extent of research fatigue amongst communities could also be useful.

Note that ,although the research themes considered to be most important are listed above, more themes were raised by workshop participants - a complete list is provided in the '*Workshop Proceeding*' section.

THE WAY FORWARD

Summary of resolutions made during the final 'Way Forward' session:

Workshop feedback assistance

Task: Production and dissemination of some form of pamphlet to assist the rural representatives at the workshop in providing feedback from the workshop to their communities.

Responsibility: DMEA

Notes:

1. It was suggested that the pamphlet content also include general information on relevant aspects of energy use, supply and institutions rather than a pure focus on the workshop.
2. It was widely felt that the pamphlet should be very accessible (i.e. use accessible terminology and be translated into local languages).
3. A suitable approach may be to produce a general pamphlet of useful energy-related information for rural areas, which targets a much wider audience than the workshop participants. This would fulfill a much broader function than workshop feedback, as it would help to bridge the obvious communication gap between rural end-users and other groups within the energy sector.
4. Participants suggested that some rural representatives and the Women's Energy Group be consulted in developing the pamphlet.
5. The RDP structures were offered as a means to facilitate dissemination. It was also suggested that NGOs and environmental fora were potentially useful for dissemination.

Workshop proceedings

Task: Provide all workshop participants with a copy of the workshop proceedings.

Responsibility: EDG

Notes:

1. It was noted that there should be a separate, more accessible, document to fulfill a feedback function to communities. This function will be fulfilled by the document to be produced in the 'workshop feedback assistance' section above, and will not be the function of the proceedings.
2. The 'National Social Development Report' provided to EDG by the RDP office for distribution to participants will be sent out with the proceedings.

Energy Policy Green Paper consultation process involving workshop participants
Task: Send all participants relevant parts of the Energy Policy Green Paper
Responsibility: DMEA

Notes: 1 As the Energy Policy Green Paper format may not be very accessible, an alternative approach may be to provide a specifically designed summary pamphlet in place of, or in addition to these extracts.

General Green Paper consultation process
Task: Conduct a consultation process which is as inclusive as possible (the mechanism by which this would happen was not decided upon)
Responsibility: DMEA, in conjunction with the Minerals and Energy Policy Centre (MEPC) and EDRC

Notes: 1 It was noted that the Green Paper must be presented in an accessible form (another way to deal with this could be to provide an accessible summary).
2 The RDP provincial structures were offered as a means to facilitate the consultation process (e.g. via provincial workshops). It was suggested that NGOs and environmental fora could be useful in reaching rural communities, and that the RDTT could be usefully involved.

Linking with provinces regarding energy planning and IEP pilot project implementation
Task: Encouraging provinces to integrate energy into development planning, and exploring the potential to conduct IEP projects in parallel with land reform projects.
Responsibility: (although responsibility was not assigned during the workshop, it would make sense for the DMEA to pursue this, but also to draw in Eskom and the oil companies)

Notes: 1 This task would combine well with other capacity building efforts on a provincial level (the need for provincial energy capacity building was raised on several occasions during the workshop).

Broader feedback process
Task: A broad information dissemination process reaching considerably further than the workshop participants. Workshop conclusions and relevant parts of the Energy Policy Green Paper should be covered.
Responsibility: Women's caucus representatives (Ilne Hofmeyr, Yvonne Pati, Marlett Wentzel) to take further.

Notes: 1 This feedback exercise may be usefully combined with the Energy Policy Green Paper consultation process, depending on what form the latter takes.

Follow-up actions arising from the pre-workshop induction meeting

At the start of the workshop, the following ideas were raised by rural community representatives as being useful in taking the workshop conclusions forward[13]:

- Workshops similar to this one could be held at provincial level to increase energy awareness at the provincial and local levels.

  Notes: 1 The Energy Policy Green Paper consultation process may achieve this.

- A committee should be established from this workshop to facilitate the implementation of workshop conclusions.

  Notes: 1 This no doubt arises out of a concern that little follow-up may take place unless responsibility for this rests with a suitable structure.

  2 Such a committee may have a limited lifespan - filling a 'gap' until Rural Local Government is operating effectively, or until sufficient redirection of resources towards rural areas has occurred within the DMEA and other relevant departments. In the interim period it could fulfil the critical role of ensuring that rural energy issues are given appropriate attention.

  3 It should be set-up soon if it is to continue the impetus from the workshop.

  4 It seems that the logical home for such a committee would be as an energy sub-group of the RDTT.

  5 It would be necessary to have rural representation on such a committee, as well as having the DMEA and others involved in developing energy policy strategies such as EDRC and MEPC, as well as the RDTT participating. Involvement from the parliamentary Energy Portfolio Committee would also be useful. Depending on the exact role of the committee, the supply sector - Eskom and the oil companies - and other government departments could be included - e.g. forestry and agriculture).

Contacting the DMEA

Dr Kotzé of the DMEA invited workshop participants to write to the DMEA with problems or policy inputs which they felt needed attention (the contact address is given on the cover page of this report).

* * *

Note: *EDG was often asked to follow up on many tasks covered in this section. Although EDG is not in a position to commit substantial resources to any follow-up activities, we are very willing to support DMEA and others in doing so. EDG will also ensure that the different responsible organisations are aware of their role in the follow-up resolutions listed above.*

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[13] although these ideas were not raised at the end of the workshop as a 'way forward' resolution, they are potentially worthwhile and thus should be given some attention

CHAPTER 3: EVALUATION

Evaluation by participants

At the end of the workshop, participants were asked to fill in evaluation sheets, commenting on where the workshop was successful or unsuccessful. They were also asked to list their strongest concerns regarding energy and rural development. The latter are covered under relevant headings in the 'Workshop Proceedings' section of this document, and they generally further emphasised points raised during the workshop sessions. About half of the participants completed the evaluation sheets.

Comments on the successes of the workshop

The workshop was generally considered successful. Amongst the most regularly mentioned reasons for this related to the broad range of participants, particularly the inclusion of a significant proportion of rural representatives and women: 'a pioneering forum', 'not dominated by experts and technocrats'. Some rural representatives felt that the critical problems being faced in many areas have at last been heard 'after 30 years of darkness'. The wide geographical spread of participants was also commented on. As a consequence of the broad participation, all those present were exposed to a great diversity of inputs. This was considered valuable, and it was seen as particularly important that women and rural representatives were heard in such a forum. The establishment of links between rural areas and the central energy department (DMEA) was seen as particularly significant.

Rural participants expressed an improved understanding of energy issues, the workings of government, and the process of policy formulation. It was widely considered an 'empowering' process by rural representatives.

Issues and ideas discussed at the workshop were also considered useful, for example: new cross-cutting issues were raised; there were insights into issues such as gender and the need for inter-sectoral cooperation and linkages; and a shift towards a 'qualitative' approach towards research occurred. The workshop was able to emphasise gaps in the research and policy process and associated structures, and generated significant consensus on various issues (e.g. the need for national fora and for local level structures).

Comments on the failures of the workshop

The workshop was considered 'too diverse' to be able to achieve its very specific objectives in the time available, and so 'limitations could be expected and have to be accepted'. There was also therefore not enough focus on a practical way forward. For example: proposals sometimes did not adequately take the realities of implementation and policy decision-making into account, and they are therefore unlikely to facilitate implementation.

Other problems mentioned concerned the pre-workshop papers: (i) some of them were too vague (not focusing on real practical issues, but rather containing 'wish lists'), and (ii) participants were usually not familiar with the content of the papers before the workshop started. As a result, it was more difficult to focus on specific issues and recommendations, and the discussions tended to be more generalised and superficial. The language and terminology used in the papers was also not considered adequately accessible by all.

It was also suggested that there was a lack of input from other sectors which impact on energy service delivery, such as local government, finance and fiscal bodies, provincial structures, and complementary programmes (e.g. public works and presidential lead projects).

Although rural participants found the workshop empowering, some commented that it was 'too much in a short time' (this reflects partly on the induction meeting).

General evaluation

The induction meeting

While the induction meeting was generally considered useful by participants (even participants with an energy background commented that they learned from it), its success was limited in that, due to unavoidable delays in the arrival of some rural participants, the time available was cut from 2.5 hours to 1 hour. This severely curtailed the discussion time, which was a critical part of the planned induction process. The potential usefulness of holding such pre-workshop meetings is nevertheless considered to be great.

The 'participatory process' vs 'strict agenda'

A characteristic of a participatory process is that some flexibility is necessary if it appears that participants wish to cover issues which may not necessarily be on a pre-determined agenda. This is considered a contributing factor to the workshop's inadequate coverage of some areas when compared with the initial objectives. One participant commented that, when groups from very different backgrounds are together, discussions tend to revolve around basic principles, and so it can be less easy to focus on more specific issues such as detailed policy or research themes.

Facilitation

In a workshop such as this, where small groups play a major part in meeting the workshop objectives, the choice of facilitators is critical. In general, the workshop facilitation was considered of high quality. The main session facilitators, in particular, successfully conducted sessions in a participatory manner and included inputs from all groups and sectors.

The allocation of resources for pre-workshop paper production

As has been mentioned, substantial resources were allocated to the production of pre-workshop papers, which were considered critical to enable participants to reach a number of specific objectives concerning energy policy and research during the sessions. Some specific objectives were only achieved to a limited extent, however, due to a number of reasons: (i) some papers were not written such that everyone could read them easily (language, terminology and paper length), (ii) some people did not receive their papers before the event (postal delays/posted too late), (iii) many people did not read their papers before the event (papers too long, participants too busy), and (iv) the papers did often not provide sufficiently concrete recommendations which the participants could then debate and modify (it was not reasonable to expect participants to generate recommendations from scratch).

The shortcomings were to some extent attributable to the highly ambitious objectives of the papers, but also due to the inexperience of EDG and the steering committee in undertaking this type of task.

While the pre-workshop papers were not as effective as was hoped in preparing participants for the workshop, they nevertheless contained much useful information and were very valuable to many participants (they also provide a reference for non-energy persons on energy matters). It is still felt that the concept of extensive pre-workshop preparation by means of research and production of documents

is an extremely valuable one if highly productive workshops are required, although the documents need careful planning and skillful compilation.

To what extent were the workshop objectives achieved?

Each objective is considered separately below.

Objective 1: **Establish a rural energy policy which supports rural development needs effectively**

(i) Policy issues: several important areas in need of attention emerged (energy security, women, stimulating the rural economy, etc), and some specific policy issues were formulated around these and other issues. The workshop did not undertake a sufficiently comprehensive evaluation of policies to give a thorough prioritisation thereof, nor were policies developed into specific strategies generally.
(ii) Policy development: shortcomings in the policy making process were identified (i.e. lack of coordination and no end-user participation), and measures to improve this situation were suggested.

Objective 2: **Establish implementation mechanisms and responsibilities such that implementation is facilitated**

Critical shortcomings in the implementation framework were identified (e.g. the need for decentralization), and the roles of provincial, RLG and CBO structures discussed to develop an adequate framework for implementation. Suggestions in developing a suitable framework for IEP implementation were also made.

Objective 3: **Identify and prioritise research programmes to support policy formulation**

(i) Research principles & approaches: principles to guide rural energy researchers and suitable approaches to community research were identified.
(ii) Coordination framework: the current lack of research coordination was identified, and relatively detailed suggestions made on the role and structure of a research coordination body.
(iii) Research priorities: several important themes were raised where it was felt that research was needed. No comprehensive research programme evaluation was undertaken however, and therefore it will be difficult to extract a complete research prioritisation from the themes presented.

Objective 4: **Identify actions necessary to take the workshop conclusions further**

Resolutions concerning improving the information flow to rural areas were made, and an approach to take IEP forward suggested. The strategy for broader dissemination of workshop results was inconclusive however, and no advocacy process to take the workshop conclusions further was decided upon. The formation of a rural energy network, as was suggested in 'paper 5' of the pre-workshop document, was not taken further. The extent to which the workshop influences future policy, implementation and research is therefore largely dependent on individual role-players taking heed of the proceedings, as no structured process for this was established.

Overall evaluation

Successes:

The most important successes of the workshop are listed below:

- The workshop focused attention on critical energy issues in need of attention in rural areas.
- The event was empowering for rural representatives and women.
- Rural people's and women's input was heard directly by key players in policy making and research positions.
- There was significant energy end-user participation in the process.
- Clear suggestions concerning policy and research processes, and implementation frameworks were developed.
- The policy issues and research themes considered most critical were raised.

Shortcomings:

The most significant shortcomings were:

- Comprehensive policy development and prioritisation was not undertaken.
- Comprehensive research programme development and prioritisation was not undertaken.
- No structured mechanism for taking the workshop conclusions further was developed.

APPENDIX A
Workshop proceedings

APPENDIX A: Workshop Proceedings

In this section of the document, the workshop proceedings are covered. Proceedings have been faithfully represented as far as possible, and the emphasis or essential content of discussions has not been modified. Participant contributions have, however, been summarised to some extent and grouped under relevant headings where appropriate (i.e. points do not necessarily appear under the sessions in which they were raised during the workshop event). This section forms the basis for the '*Key Outputs*' section, which extracts aspects seen as the most important contributions to energy policy and research processes. There is thus some duplication between these two sections.

ENERGY, RURAL DEVELOPMENT AND THE RDP

Identification of energy priorities for rural development

(following presentation of PAPER 1)

A number of areas relating to energy priorities for rural development which participants felt were particularly important to address were raised during this workshop session, and problems being experienced in rural areas were also discussed.

The situation in many rural areas was regarded by participants as critical. Energy-specific problems mentioned were:

- Some people have insufficient energy for basic cooking needs, and so go hungry.
- People usually have limited money to purchase fuels and can not afford electricity.
- The old and infirm in particular suffer, as they cannot collect wood for themselves, nor do they have the funds to pay others to do so or to purchase commercial fuels.
- Safety of current energy sources is a problem (primus stoves were mentioned in particular).

Energy security

It was pointed out that energy is a basic need for cooking and hygiene (water supply, and sterilisation in some areas), and is therefore an important contributor to basic welfare and hence could be considered a 'right' of all people. It was strongly suggested that the State therefore needs to become involved in ensuring that basic energy needs are met, although the tension between the need for financial sustainability of energy supply and the meeting of basic needs was recognised. The need to identify exactly what energy supply level could be considered a 'basic right' was also raised.

Women

Women were considered to bear the brunt of hardships in rural areas, and there was broad support on the need to improve their situation.

Women generally do not have time to collect wood or water, but they have no choice, and may have to sacrifice productive activities or potential leisure time to undertake these tasks, or delegate them to their children, which can result in their missing school. The opportunity cost to the national economy of committing so much time to these tasks is therefore substantial.

The effect of the demands of rural life on women's health was noted.

Productive activities

While it was generally accepted that energy is a basic need of households, it was also recognised that the 'user pays' principle is often important for the financial sustainability of supply. The tension between these two approaches was acknowledged, and the potential need was raised for interim strategies to meet basic energy needs until financial sustainability is attainable.

The importance of energy contributing to increasing income and employment levels (via stimulus of productive activity) was stressed as an essential component of any rural development strategies and policies.

Not only does the financially sustainable supply of energy sources such as electricity require a certain income level amongst users (and therefore a certain level of economic activity in the area), but the effective use of the energy source also requires a disposable income which is usually non-existent (e.g. to buy appliances). This reinforces the need for energy supply to be linked to stimulating productive, income-generating activities.

The point was raised that a focus on income generation should not compromise welfare. The example was given where encouraging of cash crop cultivation led to reduced subsistence vegetable growing, and the cash was spent by men on luxury items. Malnutrition resulted. Creating income does thus not necessarily mean empowering women.

Focus on stimulating productive activities should also bear in mind that the income needs to remain in the rural areas if sustainable rural development is to occur as a result of these activities. This was acknowledged as a general problem. The example was given of rural cooperatives selling paraffin and any profits from the sales thus remaining in the community.

General

Although the emphasis in rural energy debates is often placed on electricity provision, it needs to be remembered that other fuels will continue to play an important role in rural areas (paraffin, LPG, wood). These energy sources therefore need to be given due consideration in energy policies and planning.

Clarification on RDP policy

(following presentation of PAPER 4)

The RDP is not a separate, easily-identifiable entity, but is a **programme** comprised of a large number of ministries working together on implementation projects. National and provincial officials meet monthly to plan strategies. The RDP is an interim strategy, which could fall away in about five years if it achieves its objectives.

The Rural Development Task Team (RDTT) is comprised of several government line ministries (including the Department of Mineral and Energy Affairs), and was intended to provide a framework for the coordination of the efforts of different departments in the implementation of the RDP in rural areas, and to monitor rural development projects.

The RDP Presidential Lead Projects covering rural electrification do not intend to target rural households, but rather electrification of institutions such as clinics and schools, for example.

The RDP office manages all RDP funds, including those for Presidential Lead Projects (PLPs). For line departments to access RDP funds, they must submit a business plan.

Capacity building is an important focus of the RDP, and gender issues will be considered in this programme. There are three ways to access RDP funds for capacity building: (i) via the Project Preparation Facility (PPF) by contacting the RDP provincial co-ordinators; (ii) via the provincial discretionary fund where acute needs within provinces are identified; and (iii) via the broad national capacity building programme.

The hope was expressed by Mr Peter Ngobese of the RDP (Rural Development) that this workshop would inform the RDP of rural energy needs.

One RDP representative present considered that people should utilise the RDP structures more, as they represent a democratically elected system and are regionally present (however, the point was made that as there are no women provincial representatives in the RDP structures, they are not as representative as they might think!).

Shortcomings/criticisms of the RDP

There are no women provincial RDP representatives, although domestic energy is mainly a women's problem. Women therefore need to be represented on committees and government structures that will handle energy - a suggested percentage representation of 40% was considered appropriate. Gender issues appear to be a clear challenge to the RDP, and must be addressed. It was suggested that those in power (i.e. men) may not willingly hand over power, and thus women will need to assert themselves.

It was suggested that, in rural areas, the RDP itself and its structures are not as widely known as officials think.

It was questioned whether Eskom's substantial role in looking at energy for the RDP was appropriate, and that this should rather be the task of the DMEA. Mr Ngobese of the RDP Office mentioned that it may be appropriate to review Eskom's role in the programme.

ENERGY POLICY AND IMPLEMENTATION

From energy policy to implementation

(presentation of PAPER 2)

This section presents selected parts of the above presentation and relevant points which were raised during the discussion which followed.

During the presentation it was suggested that a successful policy formulating process could be judged largely by the following two criteria: (i) whether the initiative leads to a *process of planning and review on a continuous basis*; and (ii) whether the process leads to implementation and concrete progress towards the stated objectives, in this particular instance the *improved delivery of energy services to rural areas*.

Problems raised were:

- There is a lack of clarity about the process of policy formulation and no clear framework in which it can take place.
- There is a tendency for rural issues to be submerged by the concerns of the large energy supply industries.
- There is a lack of clarity about energy-related legislative and planning responsibilities/competencies at the provincial level.
- There is a lack of capacity at provincial level in energy and forestry.

- There is a lack of capacity at local government level.
- The lines of function in the energy sector do not extend to the local level.

Amongst the most important problems raised by participants related to energy being a national competency with no capacity existing at provincial or local level, energy policy and planning being supply -driven (and thus not considering end-user needs adequately), and that end-users are not involved in policy and strategy formulation processes.

The following table was used to illustrate policy process problems and potential strategies to remedy matters:

	TIER	PROBLEMS	STRATEGIES
P	NATIONAL	No clear framework.	Nat. Energy Policy Forum
O		Process unclear	Nat. or prov. workshops?
L		Research unformulated and	Co-ordinate policy
I		uncoordinated.	research
C		Who are main	Communication and
Y		stakeholders?	transparency needed.
		Rural interests	Structure in NEPF
		submerged by	for rural interests.
		business interests.	
P	PROVINCIAL	No capacity	Build capacity
L		No clear	Clarify competencies
A		responsibilities	
N		No interest	Have regional DMEA
N			representatives
I	LOCAL	No capacity	Build capacity
N		Time, expense, logistics	Build local govt
G		No proven method for	Research methods
		integrated planning	
A	LOCAL	Time, expense, logistics	Build local govt
C		No proven method for	Research methods
T		integrated planning	
I		Lack of capacity	Build capacity,
O		to deliver	finance and hardware
N		Low infrastructure	Link to RDP

Framework to integrate research into policy formation

It was suggested that the extent to which research has an impact on policy depends on factors such as the political activism in the sector, and whether the relevant Minister is interested in the issues dealt with in the research (these conditions are often lacking). This is compounded by the relatively low profile which rural areas have in the energy department[13]. The indications are therefore that there is a critical need for re-direction of resources to address problems in these areas. Suggestions to improve the efficacy of research were:

(i) Forging partnerships between affected communities, researchers and policy makers, for example by giving the proposed NEPF some responsibility for setting research agendas.

(ii) Research should be designed such that the process by which it is to feed into policy is established at the onset of a research project, and it should be ensured that this process is transparent.

[13] to make matters worse, the energy department is relatively small.

Framework for policy development and advocacy

Small group discussion highlighted the lack of co-ordination between energy sub-sectors. For example, policy options are currently being formulated in bodies such as the Low-smoke Coal Advisory Committee, the Liquid-fuels Industry Task Force (formerly under the National Economic Forum), through the writing of the Energy Policy Green Paper, and in the past, in the National Electrification Forum (NELF). Public policy making currently takes place in the DMEA.

Policy is not necessarily a State-driven legislative process, i.e. an organisation such as Eskom makes its own policy, and the role of the private sector in driving policy (e.g. petrol companies) should also not be ignored. A comment was also made that a lot of importance is placed on a national energy policy, yet energy supply is generally driven by needs and not policy - 'We don't have a coal policy, yet we are one of the biggest miners and exporters of coal'.

There was strong support from participants for mechanisms whereby:

- Rural energy end-users become involved in the policy process within some clearly defined framework. This could be achieved by establishing some mechanism for a policy feedback loop by incorporating the communities in the proposed NEPF. Environmental fora, women's organisations, and RDP structures or other institutions involved in development groups be used to establish the link with communities.
- The research community and civil society are able to lobby the policy makers, and rural people have a clear route to provincial administration to press their case.
- The effectiveness and impact of policy can be evaluated. A monitoring process should be built in from the start (with a specified time frame), and the scope for policy modification included. An example of why this is important: 'research may indicate that exempting paraffin from VAT would reduce the cost to the consumer, but this may not happen in practice'.

The main policy process strategies suggested were:

- The formation of a National Energy Policy Forum (NEPF) - where provincial and *rural household* interests in particular are represented, and where the coordination of policy research can take place (this idea is currently under discussion in terms of the Energy Policy Discussion Document (Green Paper) and received significant support from participants). The need for a dedicated rural policy focus was stressed.
- That the provinces have some kind of legislative responsibility regarding energy issues.
- The setting up of provincial Energy functions.
- Capacity building of local government.
- Empowering of communities to enable them to make choices for themselves.
- Forging links with the RDP Office to include energy on their agenda.
- Establishing energy fora or energy representation on other fora at a local level.
- Improving access to finance and hardware to facilitate implementation where projects are identified.

The need to consult communities on policy development and implementation strategies emerged regularly during the workshop. However, the tension between this need and the need to address particular policy- issues at a macro-level immediately (e.g. diverting funds from nuclear energy to energy for development), was recognised.

The danger was recognised that consulting communities on policy will only be spoken of and not implemented (especially for the more isolated communities such as those in Namaqualand), and that of the process of consultation not being a serious input into policy formulation. It was suggested that mechanisms should be set-up to ensure that this process takes place and to evaluate its effectiveness.

It was noted that in the future local government could possibly be used for the consultative processes, and where possible, local level consultation and discussion of energy policy could be linked to planning and implementation. Ideally this should be part of the same process.

The extent to which policy making can be influenced depends on access to the policy-making structures and individuals (including access to the Parliamentary Minerals and Energy Portfolio Committee). Channels to policy-making bodies therefore need to be clearly established.

It was noted that policy development and advocacy requires information at all levels, and capacity building is thus required to equip people to take part in these processes[15].

Overall, possibly the most significant governing principle to emerge regarding policies and strategies is that a mechanism should be developed to enable communities to make an input into policy development and strategy implementation (i.e. the process needs to become more demand-driven). Also, the important role of local communities in helping themselves should be recognised and explored in developing strategies.

Energy policy and strategies

(presentation)

The potential role of the government in addressing the unequal access to resources was raised in the presentation, and it was mentioned that the Energy Policy Green Paper suggests that energy provision be linked to the RDP in providing the means for a productive economy and for meeting basic needs. Social equity, economic efficiency and environmental sustainability were cited as the main principles underlying policy and strategy choices.

Policy gaps and options

Numerous options to address the inadequate situation regarding energy in rural areas were suggested. They are given here under broad categories:

Meeting basic needs

Strategies should be weighted towards the energy requirements of the poor.

A short- to medium-term subsidisation (possibly on a differential or sliding scale), together with economic development strategies could be applied to secure access to a minimum level of energy services (considered a basic need).

Towards the development of the rural economy

The potential and implications of industrial decentralization to stimulate rural economies may be worth exploring - especially for the energy sector. Other methods of developing economic opportunities in rural areas should similarly be explored, as could opportunities for individuals to establish businesses around energy provision.

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15 EDRC has developed a proposal to train local leaders in the Western Cape communities such as Gugulethu in energy issues.

development expenditure where proportionately more employment is created (a petroleum company representative mentioned that, although theirs was a capital-intensive operation, their contribution to the GDP was roughly in-line with their contribution to national employment - about half of their employees are petrol pump attendants).

Agriculture

Assistance for small-scale farmers in accessing diesel was cited as an example of an intervention requiring immediate attention. Such support will be necessary for a vibrant and expanding rural economy.

Health & environment

Environmental sustainability with respect to the natural resource base (e.g. fuelwood) needs to be included in energy planning.

Energy policy should address related health problems (e.g. legislation on the type of containers in which paraffin can be sold).

Biomass

Ownership and use of the country's wood resources (e.g. private forests, surplus wood on farmlands etc) should be targeted, and the conflict between the woodland policing and development facilitation functions resolved.

As women are often burdened with woodgathering tasks, it is particularly important to focus on facilitating access to wood in addressing their welfare. The use of state forests for domestic wood supply was raised as one potential area for policy focus.

The concern was voiced that social forestry strategies should be careful not to place an added burden on, or marginalise, women with no land, water or time to grow trees.

Electrification

As rural electrification (RE) will not meet all needs in rural areas and there will never be sufficient demand to draw Eskom into many areas, it was suggested that at least electricity supplies sufficient for lighting and media be provided, and that LPG be promoted to meet other needs (although this requires more information gathering on the costs and benefits of different options to enable rational decision-making).

Opportunities to reduce costs and/or make energy provision labour- intensive should be investigated, for example using local labour for grid-line extension can cut cost from R 35 000 to R 20 000 per km (Agrelek). Other measures to be considered are exempting fuels such as paraffin from VAT, and examining the role of bulk-buying, potentially via cooperatives, in reducing costs to the end-user.

The conflict of interests between electricity suppliers needs to be resolved (e.g. municipal vs Eskom boundaries, electricity supply industry (ESI) restructuring).

General

Government could offer companies subsidies or other incentives to get involved and assist in meeting needs.

Local level situation analyses should be undertaken and practical strategies be developed in this context - e.g. in Bochum, N Tvl, woodlots have been tried since 1975 but the trees die because there is not enough water (i.e. there was insufficient local knowledge before implementing the strategy).

Energy policy should encourage efficient and responsible energy-use to reduce economic and environmental costs, and provide the necessary support (e.g. provide energy alternatives, extension services and information) to enable people to realise the proposed policies and strategies - people are expected to grow trees without sufficient extension services; to stop cutting down electricity and telephone poles or young woodland trees for firewood without understanding resource management issues or without the provision of a cooking and heating alternative.

Land tenure systems should be considered in relation to energy supply (relevant to questions of ownership of services and subsidies).

IEP pilot projects should be implemented to promote integrated planning, and to reveal the issues involved therein.

Policy implementation mechanisms and institutions

(presentation based on PAPER 2)

An institutional framework for rural energy provision

Ensuring participation

It was generally agreed that rural energy planning should be a people-driven process and that it is necessary to establish mechanisms whereby rural people can express energy needs to appropriate authorities. The suggested starting point was to build on local initiatives and existing structures to facilitate needs assessments and implementation - examples are the CBO development structures in Namaqualand, the Local Development Fora (LDF) of the RDP in the Free State, and the Reconstruction and Development Councils (RDCs) in the Eastern Transvaal. Where no local fora exist, a suggestion was made to link with the RDP capacity building programme to facilitate the development of local organisations.

The success of water committees in incorporating communities into planning was often cited as a model to be followed by the energy sector - e.g. in the Northern Transvaal, 90 new water schemes are being managed by communities.

Another expressed concern was that women and other marginalised groups (for example, the youth, elderly and disabled), must be represented on bodies making decisions on energy, as is done with the statutory water committees, which must include 30% women. Such quotas can and need to be legislated as a part of the government's responsibility to ensure that transformation takes place in civil society.

It was suggested that planning assistance to communities in the form of the RDP's 'Project Preparation Facility' should be accessed for energy projects, but the Energy Branch of the DMEA would need to provide the necessary extension\education service (although this would obviously have financial implications which will influence its feasibility).

Integration of energy planning

The need for energy planning (both locally and provincially) to be undertaken in an integrated manner (with respect both to energy and inter-sectorally) was expressed regularly, as was the need for the establishment of support structures and mechanisms to ensure coordination of development initiatives and the incorporation of energy therein.

It was noted that energy is an essential element of all developmental programmes, and should therefore be integrated into existing programmes rather than having separate energy programmes. For example:

- The presidential lead projects (PLPs) and land reform pilot-projects need to be extended to include energy - and not only electricity as is the case with the PLPs.
- Cooperation with other sectors needs to be facilitated (e.g the housing departments should ensure that energy aspects are considered in housing design).
- Energy provision should be integrated with public works programmes where possible, e.g. linking erosion control with tree planting and job creation.

Suggestions concerning location of responsibility for IEP[15] were:

- Local-level IEP should be coordinated and facilitated by provincial government in conjunction with local government, and that provincial IEP should be coordinated and facilitated by the DMEA and the RDTT.
- The RDTT should take responsibility for overall coordination in the interim since it has the relevant line-departments on-board (and could hopefully ensure cooperation from Eskom and the oil companies).

In all cases energy planning should be sure to include all fuels being used in rural areas.

On a national and provincial level, the need was expressed for the energy sector to be more involved in developments that have implications for energy services provision, for example the national and provincial bodies and processes affecting rural local government, such as the Fiscal and Financing Commission and the Provincial Affairs Committee.

It was pointed out that people often merely pay lip-service to IEP, and that the RDP planning functions should include proper IEP in their rural energy projects (such as clinic electrification). It was suggested that IEP be piloted in some of the PLPs. Dr Kotzé of the DMEA indicated that clarity on a working definition of IEP was necessary before it could be adequately implemented.

Institutional structures for improved energy planning and delivery

Rural areas are characterised by poverty, lack of attractive investment opportunities, and low levels of service provision, and thus need for government to facilitate the provision of energy services in these parts was clearly recognised. There are, however, also clear roles for numerous other agencies as well, (including the private sector and community-based organisations).

The need for the responsibilities of different role players to be clarified, in particular RLG, was considered urgent, and there was also broad agreement that institutional structures should build on existing structures, and that capacity building to support wider participation in policy development and implementation needs to be undertaken.

The Chinese model where each line department has an Energy Division was also mentioned as possibly having local application. Thus the Departments of Water Affairs and Forestry, Health, Education etc would have people in their offices dealing specifically with energy, although a separate energy function would still be necessary in government.

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15 IEP (Integrated Energy Planning) is often used to refer to a specific methodology of energy planning. In this text it is used in a more general sense, and does not imply the use of any specific methodology.

Concerning local government and community organisations, the following points were raised:

- Current community committees concerned with energy often focus just on electricity and they mainly represent a wealthy local elite - it was suggested that all electricity committees should be converted to energy committees.
- Since local government is likely to have jurisdiction over an area with a number of separate settlements or villages, there may be a need for advisory committees from the different communities served by the local government.

Other important implementing agencies were also discussed:

- SAREDA: although SAREDA would focus on PV provision initially, the scope exists to included other energy aspects once it is firmly established (e.g. efficient woodstoves, household insulation etc.)
- Community co-operatives: the development of such cooperatives, possibly linking with the National Bulk-buying Facility, were considered worthy of further attention as a vehicle for delivery of energy sources and appliances.

Mechanisms mentioned to ensure that the relevant structures deal with energy issues in the desired way, include policy definition, legislation and financing conditions, e.g. making access to funding dependent on the achievement of certain goals in-line with the stated policy.

Petroleum companies are profit driven, and, while they are prepared to negotiate where feasible, they cannot profitably access rural areas in a financially sustainable manner. A potential solution to this is that communities could form cooperatives and negotiate with petrol companies from within this structure.

Financing

It was suggested that financing options and business plans for energy initiatives should be worked out by communities and delivery agencies, with funds being channeled through RDP structures. This is the case with water projects, where request for funding water schemes are generated through the RDP, and DWAF then undertakes implementation.

Other funding considerations raised were:

- Funding for planning and implementation should be kept separate.
- Not all routes for funds should involve local government (in some cases this structure was not perceived as an effective conduit).
- Decisions on how funds are spent should be made as locally as possible.
- Accountability should be defined by the financial structure (i.e. built into financing mechanisms and conditions).

Decentralization

In discussions on institutional structures and mechanisms for energy planning and implementation, there was a clear indication of perceived limitations of the current centralised Energy Branch of the DMEA and the need to develop energy planning capacity at a provincial and local level (similar to the structure of the Water Branch of DWAF). Important considerations mentioned in this regard were:

- Provincial representative should have enough political backing to be effective - for example structured links should exist between energy representatives at this level and the provincial political base (i.e. the MECs[16]).

[16] MEC - Member of Executive Council (provincial departmental representative)

- Provincial representatives should have energy as their priority - officials should possibly not be located within the provincial Minerals Branch offices or other provincial departments to the detriment of energy affairs
- Delivery structures such as SAREDA should have a provincial presence.

Although much power is likely to be located at the central provincial level rather than the local level, the role of rural local government was said to be important, particularly for bridging the gap between communities and provincial authorities. For example, local government is possibly the most desirable organisation to take responsibility of channeling rural energy concerns upwards and state resources downwards to meet local energy needs.

To improve energy service provision in rural areas, it was mentioned that it may be necessary to expand the powers of local government with respect to intergovernmental transfers. These transfers are generally given for a specific purpose, and local government therefore has little say in their allocation. Since prioritisation should ideally take place at a local level, it may be necessary to give local government more power to prioritise and allocate funding itself.

A further decentralization measure suggested was the establishment of Energy Planning Offices at a sub-regional level, which are linked to provincial Energy Branch offices.

Biomass

Concern was expressed about where the responsibility for biomass-related energy matters should be located, as it involves many different departments. It was suggested that the Department of Agriculture, Forestry or Nature Conservation could take responsibility of coordinating this sector - or the RDTT as they have most of the appropriate line-ministries on-board. It was suggested that policing and extension activities should perhaps be kept separate institutionally (e.g. the institution that promotes social forestry and manages woodland should perhaps not also police natural forests, plantations and woodlots).

Capacity building requirements to support the institutional framework

Though not included as a specific objective for workshop sessions, the need for capacity building was raised by a number of workshop groups. It was suggested that historically people have not been involved in debates on energy, partly because the sector has been dominated by a technocratic approach. In order for people such as energy users, service planners, implementers, and other development facilitators to participate and make rational and informed decisions, there is a need for capacity building. This includes information dissemination, training and provision of energy extension services. It was suggested that such measures are required at a local level, and should focus on enabling people to solve their own problems. In particular, action needs to be taken to ensure that the capacity building needs of women are addressed. Capacity building at the provincial and local government level was also said to be crucial.

For example, the MECs for local government in each province need access to energy advisors concerning the role of local government with respect to energy, and the MECs for housing also require such inputs to ensure that energy is taken into consideration in housing design. Such energy inputs should go beyond electricity, and consider a balanced spread of the different energy sub-sectors.

It was suggested that the DMEA, in conjunction with the other government departments involved in rural development, plan ahead for the capacity requirements of local government and other bodies involved in energy planning and implementation. It is particularly important to provide energy extension services to give input into general development initiatives if an integrated planning approach is to be established. Some suggested mechanisms include:

- Training and using organisations such as NGO's who already have some energy expertise.
- Training extension officers from other sectors (e.g. agriculture and forestry) in energy matters.

- Holding training workshops for local leaders and communities.
- The establishment of service centres could be a means for local extension provision or training, possibly in conjunction with local government.
- Incorporating energy training in school programmes.

The suggested process to achieve the necessary capacity building was that the Energy Branch of DMEA should take overall responsibility for this, including information dissemination, capacity building and development of energy extension services, and that the RDP/RDTT assist in funding and coordinating such initiatives.

ENERGY RESEARCH

Energy research principles and goals, and research programmes

(presentation of PAPER 3)

Principles

Research principles suggested by participants related mainly to the way researchers interact with communities being researched - i.e. the research process on the ground - both in the planning and undertaking of research activities. The main principles to emerge were:

- The purpose of research should be properly explained to and understood by communities participating, who should then approve the proposal and help plan the research undertaking. Communication with communities should be ongoing throughout the research exercise. Rural people should also be involved in identifying research priorities, and it was suggested that communities are drawn in when research proposals are being prepared.
- A report-back to communities should be undertaken, and funded, as part of the research programme. It should, for instance, become standard procedure to translate a summary of relevant parts of the research report into local languages.
- Local persons should be used as far as possible, e.g. in conducting surveys.
- Information on rural energy issues generated through research should become more widely available to rural people. For example, brochures could be developed to explain concepts and provide general information.
- Those who commission research should take responsibility for ensuring research ethics are adhered to by making them a prerequisite for funding.
- Research should be more implementation orientated, and deliver results that lead to projects or programmes that will address 'real' needs, and
- Research should perhaps be looking to lever funds for projects to address identified problem areas.

It was suggested that an overarching principle be that research should impact positively on the lives of those being researched. An example given was Namaqualand, where participatory research approaches have been employed, and the resulting benefits included building the capacity of local people and improving their access to outside resources and contacts. In Herschel, involving communities in research undertakings has resulted in communities identifying and implementing projects themselves.

It was also proposed that a register of researchers and consultants be drawn up on a regional basis to offer communities who wish to organise around energy issues access to expertise from the research establishment.

It is a general problem that research raises expectations that cannot be fulfilled. A participatory approach could ameliorate this problem if people are partners in the research and feel that they contribute to the development of policies.

Methodologies

Research methodologies supported by workshop participants stressed the more qualitative, participatory, and action-oriented approaches.

The need for household surveys to be accountable was expressed. It was suggested that researchers need to change their approach to respondents in order to gain their confidence. This would result in the truth being reflected more accurately, as communities may employ illegal activities to secure energy needs which they may not easily reveal (e.g. fuelwood collection from out-of-bounds areas, and tampering with or by-passing electricity meters). 'People talk rubbish because they don't understand or to get rid of researchers'.

A related point was the expressed need to use and build local research capacity to enhance the quality of research findings. Here affirmative action is particularly necessary. It was considered necessary to make funds available to equip women to take part in research activities. Women could be drawn from the numerous women's organisations already operating in rural areas, and their training could be organised and coordinated by the proposed NEPF and/or local government. The structure of the DWAF Local Water Committee training programme was noted, where communities have the option to choose DWAF training or a private consultancy to help build capacity, and funding is provided by DWAF.

It was generally felt that researchers needed to be closer to the people being researched if they were to adequately understand how communities live (e.g. to gain insight into management strategies used by households to meet their energy needs when they have extremely limited resources).

Framework to coordinate research planning, and criteria for research selection and funding

There was widespread support for the idea that energy research should be centrally-coordinated at a national level, as the perception exists that the current approach is uncoordinated and ad-hoc to some extent. Some structure would need to be set -up to assume responsibility for such coordination.

Reasons given for establishing a research coordinating body are given below:

- To oversee the process of research prioritisation leading to research implementation.
- To prevent duplication.
- To improve efficiency - particularly in the rural context where resources are scarce and the maximum beneficial impact of resource allocation is desirable.
- To promote cooperation within energy research sub-sectors and with the research establishments of other sectors, such as water, agriculture, forestry and health.
- To establish clearer lines of accountability for research establishments.
- To improve access to information regarding research proposals and results.
- To coordinate different funders with respect to financing research within identified priority themes.

Opinions varied concerning whether it would be best for the DMEA to undertake research coordination and prioritisation, or whether a new body would be better placed for this task. On the one hand, it was suggested that it would be advisable to begin with existing structures and build their capacity (i.e. DMEA). However, although the DMEA currently organises policy research, scepticism was expressed as to whether they would have the capacity to undertake more detailed research coordination and prioritisation (including maintaining rural linkages) and ensure that the research undertaken adheres to the principles suggested in earlier sections. It was considered by some to be unlikely that the above could be realised without a dedicated organisation seeing to the task.

Suggested organisational arrangements were:

- An enlarged Energy for Development Division of the DMEA, or the proposed NEPF, could have the task of setting research agendas and allocating and administering funding. In both instances, the need for adequate and balanced representation of the rural communities, policy development organisations and the research sector was noted.
- A separate body under the jurisdiction of the NEPF or DMEA could be established (e.g. a National Energy Research Council - NERC), and could be funded by them .
- Coordination could be undertaken by the DMEA, with the NEPF as a purely advisory body - so as not to diminish the important ongoing role of government in this process.
- It was suggested that perhaps the Parliamentary Minerals and Energy Portfolio Committee (sometimes referred to as the Parliamentary Standing Committee on Minerals and Energy) could have a role to play in prioritising and coordinating the energy research sector (no further details given).
- If a non-political body is preferred, a coordinating body could be the responsibility of the RDP Office, although, as the RDP Office is not permanent, it can only have an interim role.

The first suggested task of a research coordinating body would be to draw up criteria for the selection and funding of research and develop research procedures - a code of ethics for research practice (i.e. to secure the principles outlined previously).

Suggested functions could include:

- Developing draft research proposals to put out to tender.
- Allocating resources for research.
- Coordinating pre- and post-research phases .
- Undertaking a community awareness programme to invite research proposals and to make information about research available.
- Evaluating research results.
- Making information on research results more widely known.
- Monitoring research procedures.
- Compiling a comprehensive data system (research catalogue and database) for research. There was wide consensus that to establish a database of research, completed and current, involving all role-players, is an important step in national research coordination.
- Undertaking and/or coordinating research capacity building, - particularly of the traditionally black university research establishments - to make the energy research fraternity more representative.

It was noted that there should be an understanding of energy end-user and local decision-maker needs in order to prioritise research topics, and prioritisation therefore needs to include these groups. For example, local RDP structures could assist in formulating research needs and/or coordinating community consultation regarding research priorities. This is similar to the process undertaken by DWAF where research proposals are workshopped with communities to decide on priorities for research budget allocations.

The need for the coordinating process to incorporate the major research projects of organisations such as Eskom was also expressed.

Suggested criteria for such a coordinating body were that:

- It must be all inclusive, i.e. adequate representation of the rural communities, policy development bodies and research organisations.
- It should be multi-disciplinary and non-implementing.
- It should include 40% women on all committees, boards etc.
- It must be transparent and accountable.

An expressed problem is that the rural energy research agenda setting and implementation tends to be undertaken by a limited network of organisations. This impacts particularly on the current process of peer group proposal and report evaluation, which tends to be a rather 'in-house' or 'closed shop' activity. The need for broader representation in this process was expressed. A suggestion was to include the traditionally black universities, who are currently scarcely represented in the energy research sector.

If national, provincial and local research priorities were coordinated by a single centralised body, the fear was expressed that priorities could get distorted. If such a body was to be established, mechanisms to prevent such a distortion should be included in its terms of reference. Research should rather be coordinated by having a looser guiding framework or programme parameters - based on end-user defined needs.

Another suggested improvement to the process of research coordination and prioritisation was to programme research - i.e. group research into programmes or clusters of closely- related research areas/topics (the DMEA does this to some extent at present).

In India, an institutionalised national survey is undertaken on a particular theme each year, with energy being covered every four years. The same houses are surveyed each time, and thus they can observe changes over time, which is useful for exercises such as assessing the effectiveness of development programmes. This provides a constantly updated national picture which can be used to guide research, and such an approach may be appropriate for South Africa.

Research Priorities

Research themes considered by participants to be important are given below.

Consumption studies and needs assessment

It was noted that research should be careful to distinguish between energy requirements or needs and current energy usage, and should rather concentrate on trying to determine the former.

Research should focus on energy services rather than on energy carriers. Specific areas considered to require attention are listed below.

- An energy needs assessment and consumption data-base needs to be developed to inform energy planning, particularly covering household energy consumption information.
- Needs assessment of energy for service institutions and for income generating activities - particularly small businesses needs to be conducted. Many participants felt the latter to be an important area of which little is known (e.g. what rural production systems may be viably pursued and where does energy fit into the picture?).
- Agriculture - research to support emerging farmers: energy use in water pumping, irrigation, broiler units, piggeries, dairies, hothouses, aquaculture, and small-scale processing.
- Household energy management strategies. - little is known about strategies used by households to meet their energy needs when they have extremely limited resources.

Economics (cost-benefit) of various energy carriers

- There is a need to research the cost-benefit and affordability of different energy options to enable policy formulation to encourage appropriate fuel switching. In order for such research to be useful, it would need to be undertaken in the context of user- needs and local conditions, and not in isolation.
- More clarity on the environmental and health costs of energy poverty should be obtained (this would allow decisions concerning the economic cost-benefit of strategies to be better evaluated).

Energy for water supply

- In keeping with the increased focus on improving access to potable water, energy's role in the supply of a minimum level of water needs to be researched.

Energy security

- Background research to explore the feasibility and implementation of an energy security policy, i.e. ensuring access to a minimum level of energy services for all households, should be undertaken. Links with basic needs such as food security would also need to be explored.

Biomass and fuelwood

- Although work started under the Biomass Initiative is ongoing, further research on fuelwood was considered warranted. Themes to be explored include: access to surplus biomass resources, especially in the commercial farming sector and conservation areas (State and privately controlled); optimising the use of existing resources; issues of ownership of resources; and the evaluation of fuelwood projects. Research related to wood-burning stoves was also put forward as a need (e.g. the current use of stoves and how they might be usefully modified to both improve domestic health and reduce wood consumption.)

Technical research

It was generally felt that technical research should be balanced with, and integrated into programmes of social research, and should be focused on implementation - i.e. it should be action research where possible. A question was raised regarding whether technical research should be distinct, i.e. in separate programmes, from social research, as it demands a different approach and set of skills to social research.

- The main areas where technical research was considered necessary were: PV water pumping, solar water heating and wood -burning stoves (further details were not specified).

Distribution and delivery

- The need to more fully explore improving access to fuels and appliances was raised, and coal was specifically mentioned. In particular, there is a lack of understanding on the distribution of liquid fuels in rural areas. This prevents the formulation of appropriate policy to address problems such as high price mark-ups.

Institutional arrangements

- A critically important area of research that was identified related to the institutional arrangements necessary for energy policy development, strategy formulation, and service delivery to be effective. The role of local government, local development fora, and provincial offices needs to be explored and defined to ensure adequate communication between end-users and suppliers and researchers, and to facilitate the implementation of policies.

Social research: empowerment

- Research into processes of empowering women and engaging the youth is also needed. Although this is not specific to energy, it clearly has relevance.
- Information needed by communities to assist them in making informed decisions on energy matters was also raised as a useful research theme.

Financing

- Research on financing requirements and mechanisms in rural areas for energy technologies should be undertaken.

Research on research

- The research process itself could be usefully researched, with a view to improve the impact and efficiency of future research projects. There should be follow-up studies on the impact of research projects on the local culture and the extent of research fatigue amongst communities.

Policy

The need for further policy research in general was flagged, although further details were not provided.

Omissions

Amongst the important areas not covered by the workshop participants were:

- Draft power.
- Electrification.

A WAY FORWARD

(presentation of paper 5)

This was the final session of the workshop and covered the recommendations made by the participants on the way forward.

Two follow-up processes were requested by workshop participants. The first came from two groups of rural participants, who requested support from the DMEA/EGD with the report-back to their respective communities on the workshop proceedings and conclusions. They felt that their communities had high expectations, especially as many participants had been sent with a mandate from their communities to represent them. It was agreed that an accessible pamphlet in local languages with relevant information, possibly explaining the outcome of the workshop might suffice: 'a pamphlet in the vernacular will be very useful for reporting back to communities'. It was noted that such a pamphlet should be as much a part of the post-workshop process as the intended 'academic' post-workshop report. Participants considered that such a pamphlet should be developed in consultation with rural participants, and that it would be most beneficial if energy experts accompanied the dissemination exercise.

How was such a pamphlet to be funded? Dr Kotzé (DMEA) said that the department may be able to provide financial support for such a pamphlet, and he would champion the idea through his ministry.

It was mentioned that if community representatives at the workshop were to give feedback to far flung communities in their regions, to reach a wider audience, this could not be undertaken without financial assistance, as it would take tremendous time and energy.

In response to a request aimed at the RDP Office to support a community-driven capacity building pamphlet, an RDP representative said this would be considered if a business proposal were submitted from the community. Concern was expressed that there are regions where RDP structures are not reaching, and this would need to be taken into account if a dissemination process is to involve the RDP structures. Also to be considered is the fact that many women are illiterate in some areas, and thus would not be able to access information in pamphlet form.

Another issue which was given some time during this session was the need for a Energy Policy Green Paper consultation process. While the DMEA expressed commitment to 'as wide a consultation process as was financially possible', no final decision had been taken on the method as yet. An RDP representative mentioned that the RDP would not fund a policy-making process, e.g. the Energy Policy Green Paper process).

There was a suggestion that at least all the workshop participants should be sent the Energy Policy Green Paper. It was noted that sending the Energy Policy Green Paper in its entirety was pointless, and that the policies pertaining to rural energy only should be extracted. Commitment from the DMEA to undertake this task was given. A few delegates asked whether the EDG workshop report-back to communities could not be held at the same time as the Energy Policy Green Paper workshops, and it was suggested that EDG get funds from the DMEA to develop both a report-back pamphlet as well as a pamphlet to prepare communities to give input into the Energy Policy Green Paper.

In order to carry out an accessible Energy Policy Green Paper consultation process, it was suggested that provincial workshops be held, and that energy specialists be present. Concern was expressed that there was not the capacity at a provincial level to facilitate a meaningful consultation process, although it was suggested that structures could possibly be established via a Rural Development Task Team facilitation process. RDP representatives offered their structures for energy policy related consultations.

A representative of the Women's Energy Group said her organisation would like to hold workshops on women's energy issues to prepare women to take part in the Energy Policy Green Paper consultation process, and requested funding for this.

It was suggested that all individuals, community organisations, NGOs, EDG and DMEA ask themselves what they can do to reach rural communities and help them fulfil their energy needs , rather than waiting for external support to do anything.

The DMEA made a commitment to become more accessible to communities, and to look at supporting suitable research and pilot energy projects brought to their notice by communities. Although the communication between DMEA and rural end-users was seen as important, it was thought that this channel was unlikely to be well utilised without a clear mechanism for this to happen and without information dissemination to let communities know of this route. Dr Kotzé (DMEA) requested community delegates to write to the DMEA and communicate problems or input on policy to: Private Bag X59, Pretoria, 0001.

Women's caucus meeting: The women present at the workshop held a separate caucus meeting on the second evening. Arising from this, they requested an additional follow-up process comprising a broad information dissemination process, e.g. involving workshops and/or materials, reaching considerably further than the workshop participants. Both the workshop conclusions and the Energy Policy Green Paper should be covered. They elected Yvonne Pati from the Woman's Resource Centre, Marlett Wentzel from the DMEA and Ilne Hofmeyr from EDG to coordinate this process.

Submissions are also being invited for the RDP Gender Commission: Tel (012) 328-4708 and fax (012) 323-9512.

APPENDIX B
Pre-workshop papers

PAPER 1

The rural energy sector and its links to rural development

Anthony Williams

SUMMARY

This paper gives a brief overview of energy's role in rural areas. It forms the background for the discussions during this workshop.

By far the majority of poor households in rural areas depend on fuelwood to meet their basic energy needs. Paraffin and gas are also used, and candles are the main source of light. Very few rural people have access to electricity.

Energy is an essential element of rural development, its uses are diverse, including cooking, lighting, water and space heating, refrigeration, draught power for farming and transport, shaft power for water pumping and crop processing. These services are required by three broad energy using groups: the domestic, service and economic sectors.

Rural energy use should be seen in the context of rural poverty, neglect and underdevelopment. A large number of factors directly affect energy use. Some operate on a regional scale, others at the settlement level, while a final group affect individual households. It is clear that the availability of women's time is one of the most important factors determining household decisions on fuel use.

Current rural energy supply systems and problems

Indigenous woodlands are the primary source of rural energy. These are under heavy pressure, with the situation varying from area to area. National fuelwood use is about 11 million tons per year, and the estimated annual sustainable supply of fuelwood probably no more than 5,8 million tons.

Commercial fuels, paraffin, candles and gas are used mainly by households, and diesel, mainly for agricultural purposes. Relatively little is known about their distribution in rural areas. They are expensive, but it is unclear where the price mark-ups occur in the distribution chain. Significant cost reductions have been achieved through the National Bulk-Buying Initiative.

Energy has associated health and safety risks, and rural people are particularly exposed to these. Increasing scarcity of fuelwood has led to increases in the distances walked and heavier headloads, both of which place considerable stress on the physical well-being of women. Very high air pollution levels from open woodfires lead to a high incidence of respiratory illnesses. Other common problems are the swallowing of paraffin by young children, and burns.

Some strategies to increase and improve rural energy supply

As fuelwood is likely to remain the primary source of rural energy, even with improved access to other energy sources, a fuelwood security programme is needed to ensure a sustainable supply of cheap and renewable energy. The programme should be flexible and include improvement of indigenous woodland management, social forestry, expanded small-grower schemes and the promotion of the distribution of wood from areas of surplus.

The development and introduction of woodstoves with chimneys, and the promotion of improved fire management would have the dual benefits of reducing smoke levels inside dwellings, and improving the efficiency of fuelwood use.

The cost of paraffin, diesel and gas in rural areas can be reduced by shortening distribution chains, and their pricing structures should be reviewed. The prevention of paraffin poisoning should be a major area for public policy intervention.

Essential electricity services should be provided in support of health care, education and other important services, by means of either grid connections or remote area power supply (RAPS) systems. However, rural electrification should not undermine the financial viability of the electricity supply industry.

Conclusion

It is clear that energy use in rural areas is a complex issue, requiring flexible strategies. There is a definite need for integrated rural energy planning within a framework of integrated rural development.

Finally, although it is necessary to be fully aware of the constraints that exist in rural areas, the *opportunities* presented by *available* indigenous skills and resources, which could be developed and used for improvement in energy service delivery, must not be underestimated nor overlooked.

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1 INTRODUCTION

The rural areas of South Africa, where about 40% of the country's population lives, bear some of the worst scars of the repression and neglect of the former government. By far the majority of poor households in rural areas depend on fuelwood to meet their cooking and heating energy needs. Paraffin and gas are also used, and candles are the main source of light. With the exception of commercial farmers and some farmworkers, few rural dwellers have access to the convenience of electricity as an energy source.

Although fuelwood is often collected free of charge, its use comes at tremendous physical cost. The task of collecting it falls mainly on woman, who make an average of three trips per week, each lasting between two and six hours. In addition, recent research indicates that the air pollution caused by woodfires, exposes rural dwellers to risks of respiratory illness five times higher than those experienced by urban households using electricity.

2 RURAL DEVELOPMENT AND ITS ENERGY LINKAGES

Energy is an essential element of all rural development projects. Energy has been shown to be particularly important in improving the benefits of other rural investments, and failure to plan properly for energy requirements may weaken the effect of entire projects. It is therefore vital to identify energy needs at an early stage in a project's development so as to ensure that they are included in the project design.

In theory, the provision of energy to a rural development project is no different from the provision of other necessary inputs. In practice, however, the energy part of rural development has some unique features that call for special attention:

- Energy is an essential input to *all* rural activities. In fact energy is so basic an ingredient that it is often forgotten and project design is based on assumptions about the *existing* energy supply. Experience, however, tells us that energy supply options should be integrated into *each* rural development project, and all energy supply and technology options should be considered.

- Information about rural energy systems and use patterns only began to be gathered recently, and there is still little understanding of these parts of the rural economy.

- New energy supply options, such as rural electrification, often require large capital expenditure and special skills, and take longer to develop and carry out than many other infrastructural projects.

2.1 Approaches to rural development

There are probably as many ideas about rural development as there are people involved in it, but the following definition probably reflects the thinking of many[1]:

> *Rural development is a strategy to enable a specific group of people, poor rural women and men, to gain for themselves and their children more of what they want and need. It involves helping the poorest among those who seek a livelihood in the rural areas to demand and control more of the benefits of development. The group includes small-scale farmers, tenants, and the landless.*

This definition places people at the centre of development. It emphasises the achievement of concrete goals, as well as the way in which these are defined and achieved. Moreover, although the development initiative often starts with outsiders, the aim is to transfer more and more power and control to the poor. It is argued that the primary development objective should be to enable the poor to satisfy what *they* have identified as their needs. Other more general development objectives would then follow naturally.

The 1970s saw the Integrated Rural Development (IRD) approach appear in response to the failure of many large infrastructural development projects in the 1960s. An important feature

[1] Chambers, R (1983). Rural development: Putting the last first. New York: Longman.

of IRD was the realisation that rural development involves the interaction of a large number of closely linked activities which must be systematically planned and implemented at the same time e.g. improved agricultural production, health services and education. This multiple-goal character makes IRD very ambitious and therefore, difficult to implement.

Given the problems experienced with IRD, a more focused single sectoral approach has been developed. This approach looks for the so-called *critical path*, which defines the close links between key factors from various sectors which *have* to be satisfied to achieve a specific sectoral objective e.g. the need for better water supply and transport, and secure land ownership before food security can be achieved. When development projects are planned and implemented using this approach, attention is paid to *other* sectors only if they are *essential* to the success of the central sectoral development objective.

Taking this approach, it is clear that the provision of adequate energy supplies will very often be one of the key factors in the *critical path* which will ensure the success of a particular development project. For example, safe water supplies very often require power for pumping; clinics need energy for lighting and the refrigeration of vaccines; agricultural projects may require power for pumping or ploughing.

2.2 Energy's role in rural development

When asked to list their priorities in terms of needs, in addition to income, rural people usually identify access to water, food, health care and educational services. These, together with shelter, clothing and sanitation are generally grouped under the heading of 'basic needs'. However, it is often not easy to define the contents of a basic needs 'package', nor to decide when a basic need is adequately satisfied. The relationship between energy and basic needs is clearly of importance, as energy itself is often not identified as such a need. However it is, by its nature included in a 'package' of basic goods and services because of the crucial role it plays in the satisfaction of other basic needs.

The rural poor in South Africa lack access to most of the basic needs listed above. Thus rural development policy in South Africa must incorporate a strong emphasis on satisfying these needs. However, it should be pointed out that satisfaction of them is a necessary but not sufficient condition for economic development.

To conclude, the purposes for which energy is used are diverse, and include a range of services, which are also known as end-uses, such as cooking, lighting, water and space heating, refrigeration, draught power for farming and transport, shaft power for water pumping and crop processing, and so on. These services are required by a variety of energy users, who can be placed in the following three broad energy using groups:

- The domestic sector, i.e. households requiring energy for domestic needs such as cooking, lighting, water and space heating, refrigeration, media and recreation etc.
- The service sector, i.e. community facilities such as clinics, water supply, schools, administration facilities, community centres, street lighting, churches, police stations etc.
- The economic sector, i.e. activities such as farming (including subsistence farming), trading, manufacturing, transport etc.

3 CURRENT RURAL ENERGY USE PATTERNS

This section tries to describe the complexity and diversity of energy needs and use in rural areas, to serve as a background for the discussion of rural energy policy and proposals for improving energy supply.

A major obstacle in trying to understand energy use by rural people nationally is the lack of adequate and appropriate information. The studies conducted to date in the former homelands can broadly be categorised as those looking at: settlements located in different homelands; settlements scattered throughout a homeland; or a particular district.

By contrast, studies of energy use by farmworkers have mainly been conducted at a broad national level. In a few cases particular regions have been covered, but generally very little information is available on regional and particularly sub-regional differences. It is therefore difficult to collate and make comparisons between data on farmworkers and other rural households in a meaningful way.

Most studies have tried to analyze general easily measurable trends in energy use. There is a serious lack of *qualitative* information on rural energy use at the household level. This type of more textured, detailed information is necessary to develop a deeper understanding of the dynamics of energy use, and particularly the factors that operate in the household to influence it. Although analysis at the level of the settlement is necessary, it has severe limitations, because it neglects important factors and does not help us reach a *real* understanding of the complexity and diversity of energy use in rural areas.

To deal with these problems a different research approach is emerging, which places the emphasis 'on gaining an understanding of the decisions that people make under particular circumstances, the ways in which they use fuels to meet their needs and how energy use is affected by other aspects of their lives. *This approach is motivated by the conviction that a proper understanding of these matters is an absolute necessity if strategies to improve energy service provision are to make a significant impact on the lives of rural people.*'[2]

3.1 The domestic sector

The energy services or end-uses, cooking, heating and lighting are the most basic energy services and are required by even the poorest of households.

3.1.1 Cooking

Cooking is a complex activity which forms a central and important part of the physical and cultural life of people, and can be seen as a 'system' with the following elements: the kinds of food prepared; methods of food preparation before cooking (e.g. grinding, soaking); cooking methods (e.g.,boiling, frying); cooking utensils/equipment; fuels and appliances; the location and structure of the kitchen/cooking area; ways in which the fire or appliance is used and managed; ways in which the cooking utensils are used (e.g. the use of lids).

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[2] Thom, C (1994). Energy for rural development. Energy for Development Research Centre, University of Cape Town.

Cooking is associated with strong and often highly specific preferences. Some of the reasons for choosing particular fuels and cooking appliances are ease of handling and lighting, flame quality and temperature, ability to secure fire from young children, smokiness and the taste given to food, as well as relative prices and availability of fuels.

Fuel preferences are often related to particular cooking tasks, reflecting the specific requirements for the preparation of different foods. In one study it was observed that all respondents to a survey felt that fuelwood was especially good for samp and beans, as they require a long cooking time. It appears that only a small percentage of rural people seem to *like* paraffin as a cooking fuel, although it is commonly used. In a recent survey, 80% of households surveyed owned paraffin stoves, 54% being Primus and the rest, wick stoves.

The total, rather than cooking time alone is important, as the preparation and lighting of a fire also takes time. Sometimes straight time constraints determine the cooking fuel used, thus paraffin is used for quick snacks or boiling water for hot drinks.

In addition to domestic needs, there are a number of informal income-generating activities which also involve cooking. These include the preparation of food, baking of bread and brewing of beer for sale. It may be very difficult to separate the use of fuel for these purposes from that for domestic cooking.

3.1.2 Water heating

In a survey covering six areas spread around the country, it was found that water was commonly heated for making tea, bathing and washing dishes, but not to do the laundry. Both woodfires and paraffin stoves were widely used, and cooking fires were almost always also used for heating water. Paraffin stoves were more commonly used for boiling tea water.

Households in the foothills of one area used hot water only for bathing in the morning, and none heated water for washing clothes. On the plains however, people sometimes heated water over an open fire to wash clothes. Two thirds of the respondents in this area used paraffin or gas stoves to boil water in the mornings. In another area however, it was observed that none of the respondents used hot water for bathing. Here water was only heated to make tea, and any that remained was sometimes used to wash dishes.

3.1.3 Lighting

The main reported need for lighting is to allow children to study in the evenings. Other reading activities appear to be limited. People also commonly listen to radios in the evenings, and lighting is often used. Candles and paraffin are the lighting fuels most commonly used. Gas is not often used, even in areas where it is commonly used for cooking and heating. Open fires provide lighting for entertainment and social purposes, such as parties, and visiting and chatting.

Lighting is often the only energy service which very poor rural households pay for. It is often found that households unable to afford any other fuels still spend a small amount of money every month on candles, sometimes buying one candle at a time.

3.1.4 Space heating

The energy requirements for house heating are influenced not only by climate and weather but also by house design and construction. Space heating requirements can vary widely as a result of climate, ranging for example, from 4% of fuelwood use in coastal Kenya, to 20% in the cooler Rift Valley. Energy use in winter can be as much as double that in summer.

Open woodfires are generally used to heat rural homes, and are also preferred for this purpose. Also woodfires often serve a number of purposes at the same time, such as cooking, water heating and space heating.

About 68% of rural houses covered in a recent survey had corrugated iron roofs, while only 29% used thatch. As corrugated iron is not as good an insulation material as thatch, this change from the traditional thatch roofs will increase energy use for heating of homes.

3.1.5 Other services

Other domestic services commonly needed include ironing and the use of radios, and to a lesser extent radio/cassette recorders. Ironing is usually done by heating an iron on a fire or stove, with a variety of fuels being used, including wood, coal, paraffin and gas.

Radios and similar items are usually operated from dry-cell batteries. Households may also acquire hi-fi's, television sets and fridges. The first two are usually operated from lead-acid car batteries, and less often from petrol generators. Only a small percentage of households are able to afford lead-acid batteries, and very few can afford generators. Fridges are usually paraffin- or gas-powered.

3.2 The service sector

It is evident that adequate water supply in rural areas is one of the most important development priorities, given that 12 million people do not have access to adequate potable water. Meeting these needs has significant implications for the energy sector, as adequate and appropriate forms of energy will be needed to pump water.

Turning to health services, in addition to its impact on health through proper cooking and safe water provision, energy is needed for the provision of health services themselves. Particular energy service needs are for lighting and vaccine refrigeration. Most rural hospitals now have access to grid electricity. There are also about 2 000 existing residential clinics, 75% of which are not electrified and currently rely on paraffin for lighting and gas for refrigeration. Much emphasis has been placed on the electrification of rural clinics, with both grid and solar photovoltaic (PV) options being considered. Proximity to the national grid is the main factor determining the choice.

In the short term, developments in rural education are likely to concentrate on providing more schools, teachers and equipment for primary and secondary education. Although energy services are not a priority educational need, they can greatly improve the quality of education, and increase the usefulness of educational facilities, e.g. lighting opens the way for night classes, or for schools to be used for other training and community activities.

The main energy uses in schools are lighting, space heating, operating audio-visual, laboratory and domestic science equipment, and for preparing meals. At present only about 14% of schools are electrified, most of which are in urban areas. The electrification of rural schools, together with clinics, is seen as a priority by Eskom and the RDP office.

Telecommunications such as telephone and radio telephone are another essential service currently lacking in rural areas. These would obviously also have an energy requirement, which is not large, and can be met by renewable energy technologies such as solar PV cells.

Finally, the establishment of rural service centres, which could serve a number of communal needs is being suggested by rural development planners. Recommendations are that such centres should be electrified, and be equipped with audio-visual equipment to support training and extension, a grain mill, and workshop facilities for the maintenance and repair of tractors, pumps and other equipment.

3.3 The economic sector

The nature of the rural economy is such that it is almost impossible to separate energy use for productive purposes from domestic energy use. We need to look no further than the many tasks that women perform in the rural economy to understand this. Women are responsible for the collection of water and fuelwood, the preparation of food, the cultivation of crops and very often, also for income-generating activities.

Probably the most important activity in this sector is farming. Energy is a major input to the development and sustaining of agricultural production. At present there is a great shortage of suitable energy sources in the small- and medium-scale farming sector, particularly to meet the two most crucial agricultural energy needs, power for land preparation and transport, and water pumping. Other energy uses include, heating for egg incubation, refrigeration for storing perishables, and crop processing.

Animal traction and human labour are currently the most important draught power sources for land preparation, with tractors being available in some areas. There is evidence that shortages of draught power represent the single most important constraint on arable agriculture. Diesel is a serious problem as supplies are limited in small-scale farming areas.

Very few small- and medium-scale farmers have adequate energy to provide water for crops or animals. They rely on rain, gravity irrigation and labour-intensive watering practices. Only one in seven of the community gardens in KwaZulu/Natal have pumping facilities, mainly diesel-powered.

Other energy needs in the economic sector cover a wide range from the lighting and refrigeration needs of traders through to the energy needed for equipment in workshops. Indications are that a significant percentage of rural people are involved in informal income-generating home industries such as the making of clothes and the preparation of food for sale. Other activities include baking of bread, beer brewing, and brick and pottery making. Very little is known about their specific energy needs.

Future demand for energy services in agriculture will be influenced by agricultural and land reform initiatives, and clearly, economic development will result in an increased demand for services in rural areas, resulting in a parallel increase in the demand for energy.

4 PRIMARY DETERMINANTS OF RURAL ENERGY-USE

Energy use by rural people should be seen in the context of rural poverty, neglect and underdevelopment, as these conditions influence patterns of energy use. A large number of interlinking factors can be identified which directly affect energy use. Some of these, such as the state of the economy of the region, the climate and vegetation characteristics, and people's attitudes and traditions, affect people on a regional scale.

Other factors are of a more local nature and would affect households in a particular settlement. These include how close a settlement is to centres of economic activity, its location in relation to major transport routes, and in particular, the availability and prices of fuels. In addition, the position of a household *within* the settlement, including its physical location, social status, the gender of the household head, and access to political power and resources, can also all have an influence.

Finally, there are factors which operate *within* households. These include things as varied as: the structure and size of the household; the nature of its cash income, both in quantity and how often it is received; availability of other resources such as fuelwood and land; demands on these resources; household decision-making processes and relations between women and men; linkages between food and fuel use; and perceived energy needs and priorities.

In addition, energy-related decisions are influenced by specific requirements, as we saw earlier. For example, the need to complete cooking and water heating tasks speedily in the morning, and specific preferences such as the use of fuelwood to prepare certain meals. However, the manner in which these decisions are made, and the way in which various factors affect such decisions, are little understood.

5 CURRENT RURAL ENERGY SUPPLY SYSTEMS AND PROBLEMS

5.1 Fuelwood

The primary source of energy in rural areas is indigenous woodlands, which in some areas have been completely cut down and in others are under heavy pressure. The situation varies significantly from area to area, and this must be kept in mind when analysing the national fuelwood demand-supply situation. It is estimated that national fuelwood use is about 11 million tons per year, of which about 6,6 million tons is used by rural households in the former homelands and 3,5 million tons by farmworker households, and the balance in urban areas. Crop wastes and cattle dung are also used in some areas, but little is known about their total use for energy purposes.

The estimated total sustainable supply of all indigenous *wood* in the former homelands is 11,6 million tons per year. When we consider the wood suitable and accessible as *fuelwood* it becomes clear that probably no more than 5,8 million tons of the above can be used as fuelwood. Some of the reasons for so much being unavailable or unsuitable are: its size, poisonous smoke; superstition; wastage during collection; unused surpluses in one region that can not be easily distributed to others; local constraints such as distance to woodlands; use of wood for fencing and construction; and losses through fire and insects.

As regards commercial forestry residues, no firm figures are available, but they are estimated to be between 2,5 and 4 million tons per year. It is thought that much of this is transported to the former homelands, as is bush clearing waste from commercial farms.

It is clear that the availability of women's time is one of the most important factors determining household decisions on fuel use. The average duration of fuelwood collection trips recorded in the rural areas of South Africa varies between 2,5 and 6,2 hours, and these trips are generally made two or three times per week. In one area it was found that the average number of working hours spent on fuelwood collection by each household varied between 50 and 85 hours per month, and in one settlement it was as high as 178 hours during winter.

In some areas fuelwood scarcity has resulted in it being sold by vendors. However, even where this has happened, collection of fuelwood, although difficult, is still common.

5.2 Commercial fuels

Commercial fuels include fuels such as paraffin, candles and gas used primarily by households, and diesel used mainly for agricultural purposes. Relatively little is known about their distribution in rural areas after they leave the formal network of the bulk oil company depots and distributors. Indications are that paraffin and candles are bought from a range of sellers, including trading stores, service stations and informal 'spaza' shops. However, no clarity exists on the percentage of sales from each of these, the number and the nature of the intermediaries in the distribution chains, and the nature of price increases along the chain.

Rural energy surveys often provide some information on fuel sellers, but this is generally of a limited nature. For example, it was found that paraffin and candles were bought mainly from formal traders as opposed to informal outlets in certain rural areas. It would appear that gas is mostly purchased from formal traders, probably because of the safety precautions and equipment needed.

Although the maximum selling price of paraffin is set by law, it is only effectively controlled to the wholesale level i.e. at the oil company depots, as it has been impossible to control the final selling price. Only limited information is available on the actual price of paraffin in rural areas, but indications are that it is considerably higher than the legislated price. It was found that it sold at between R1,38 and R1,56 per litre in one area, while a mean retail price of R1,58 per litre was found in another. This can be compared to the legislated selling price at the time, of approximately R1,09.

It is unclear where the price mark-ups occur in the distribution networks, or whether it merely results from the number of intermediaries involved. Studies conducted in urban areas indicate that significant price increases occur both at wholesale and retail levels, and similar tendencies are expected in rural areas.

Significant reductions in the costs of paraffin to users have reportedly been achieved in areas where community controlled wholesalers and satellite depots have been set up as part of the National Bulk-Buying Initiative (NBBI). Discounts are negotiated by the NBBI with suppliers at a national level. Mark-ups at the wholesalers and depots are determined by community bodies, and savings are passed on to the consumer. At the same time, the interests of poor households who run 'spaza' shops are protected by specifying the minimum quantities of fuels which can be sold at the community outlets.

In the case of farmworkers, fuels are usually bought from shops in towns and in some cases from 'farm shops' run by farmers. The constraints on the use of these fuels by farmworker households include the reported high prices charged by 'farm shops', lack of transport to reach supply stores, the fact that relatively few farmers provide these fuels to workers, and the cost of appliances, particularly in the case of gas.

5.3 Energy-related health and safety problems in rural areas

Although all forms of energy have associated health and safety risks, rural people are particularly exposed to such problems. In many rural areas the increasing scarcity of fuelwood has led to increases in the distances walked to collect wood, while headloads have become heavier, to reduce the number of trips made. These two factors place considerable stress on the physical well-being of rural women, and may lead to back injuries.

Very high air pollution levels which result from the use of open woodfires, have also been found in the homes and cooking shelters of rural households. This has been linked to high incidence of respiratory illnesses, and rural children are exposed to risks between four and five times higher than those experienced by children of similar socio-economic status in homes using only electricity.

Another common problem is the swallowing of paraffin by young children. As it is often sold in softdrink bottles it can easily be confused for water. The effects of this range from coughing and choking, to diarrhoea and vomiting, and possibly even death. Burns resulting from open flames or boiling water are also common occurrences.

6 SOME STRATEGIES TO INCREASE THE CAPACITY OF RURAL ENERGY SUPPLY

It is apparent that there are significant problems being faced by rural people in meeting their energy needs. No coherent policy framework has yet been developed to deal with these problems, although the Department of Mineral and Energy Affairs (DMEA) is taking some steps to address some of them. The capacity to carry out integrated energy planning at the provincial and local levels needs to be developed, to ensure the formulation of appropriate rural energy supply strategies.

6.1 Strategies to secure fuelwood supplies

Fuelwood is likely to remain the primary source of energy in rural areas, even with improved access to other energy sources such as electricity, gas and paraffin. A fuelwood security programme is needed to ensure the sustainable use of wood resources to provide a cheap and renewable source of energy. A programme known as the Biomass Initiative - Plant for Life was started by the DMEA. The planning phase recently ended, and consisted of two main components. The first, called the Biomass Assessment was, in broad terms, aimed at determining the situation in the country with regard to indigenous wood resources and their use for energy supply and other purposes. The second component consisted of a number of pilot projects to look at various ways of addressing rural energy needs through the planting of trees and other strategies.

The next phase will involve further State expenditure to develop projects on a wider scale. Given the wide range of knowledge, perceptions and attitudes of rural people, particularly with regard to ownership and control of land and trees, resource management and energy,

a diverse and flexible package of strategies are required. These should include improvement of indigenous woodland management, social forestry, expanded small-grower schemes and promotion of the distribution of wood from areas of surplus. A campaign to encourage commercial farmers and foresters to allow easier access to their surplus wood resources and forestry wastes should also be conducted.

There is a need to find ways of reducing the health risks rural households face from their exposure to high levels of woodsmoke air pollution. The development and introduction of woodstoves with chimneys, and the promotion of improved fire management techniques could have the dual benefits of reducing smoke levels inside dwellings, and improving the efficiency of fuelwood use. Such programmes should be firmly based on indigenous technical knowledge, and be sensitive to end-user needs.

6.2 Improving availability of commercial energy sources

The cost of paraffin, diesel and gas in rural areas could be reduced by shortening the distribution chains through a better distribution of bulk tanks and expanded deliveries by oil companies to these areas, and through community-based bulk buying schemes. Various parts of the paraffin and gas prices should be lowered, such as the service differential and equalisation fund levy in the paraffin price, and the distribution cost differential for gas.

The prevention of paraffin poisoning and burns should be regarded as a major area for public policy intervention. Education and publicity campaigns should be run with the message to keep paraffin in safe containers and out of reach of infants. The development of affordable child-resistant lids for the most commonly used paraffin containers should continue with increased State support if required.

6.3 Rural electrification strategies

As far as rural electrification (RE) is concerned, essential electricity services should be provided in support of health care, education and other locally-identified important services. Electrification of clinics, schools, community facilities and rural service centres, by means of either grid connections or remote area power supply[3] (RAPS) systems, should be a national goal. This process has already been initiated by the IDT, together with Eskom.

However, RE should not undermine the financial viability of the electricity supply industry (ESI). The application of integrated energy planning techniques in RE planning is therefore essential. This would enable the ESI to determine which of the electrification options would be the most appropriate. In addition, much work is still required to develop a viable RAPS strategy. Both the DMEA and Eskom should be investing in appropriate pilot projects and strategy formulation to channel international aid funds and to facilitate the delivery of RAPS systems. The DMEA has already started an investigation into the viability of setting up a funding and implementation agency to deal with these issues.

[3] These are isolated power generation systems which supply local electricity users. They are not connected to the national Eskom grid. They can be diesel or petrol engine-powered generators, wind turbines, micro-hydro power stations, or photovoltaic cell powered systems.

A distinction can be drawn between the electrification of public facilities and households. An important political question is to what degree the State should provide rural households with electricity, by means of either a grid connection or a RAPS system. These are difficult choices, and appropriate institutions and mechanisms for making these planning decisions need to be developed, again applying the principles of integrated energy planning.

7 CONCLUSION

To conclude, it is clear that energy use in rural areas is a complex issue, requiring strategies that will differ from one area to another. There is therefore a definite need for integrated rural energy planning within a framework of integrated rural development. This approach should help to ensure that energy supply strategies are developed appropriate to a particular context and to contribute to all aspects of development.

In addition, energy planning should, where possible, be sensitive to broader objectives and concerns of rural development such as basic needs satisfaction, truly participatory involvement in both planning *and* implementation, employment creation, skills development, organisational and institutional development, improvement in infrastructure and basic services, improvement in the status of women, and improvement in the living conditions and opportunities of the *poorest* rural people.

Finally, it is necessary to be fully aware of the constraints in the form of the shortage of skills and resources, and the lack of infrastructure and delivery mechanisms in rural areas. However the opportunities presented by *available* indigenous skills and resources, which could be developed and used for improvement in energy service delivery must not be underestimated nor overlooked.

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PAPER 2

From energy policy to implementation: process and pitfalls

Mark Gandar

SUMMARY

Historically, energy policy and planning has not contributed greatly to delivery of energy services to the rural poor. This paper distinguishes between policy, planning and implementation. It is more concerned with the process of formulation of the policies and plans, and how they are (or should be) translated into action, than it is with their actual content. By identifying some of the obstacles and problem areas, some strategies have been suggested to smooth the process.

Diagnosis

- There is a lack of clarity about the process of policy formulation and no clear framework in which is can take place.
- There is a tendency for rural issues to be submerged by the concerns of the large energy industries.
- There is a lack of clarity about legislative and planning responsibilities/competencies at the provincial level.
- There is a lack of capacity at provincial level in energy and forestry
- There is a lack of capacity at local government level.
- The lines of function in the energy sector do not extend to the local level.

Strategies

- Persue the formation of a National Energy Policy Forum/Council with a substructure for rural energy and household energy.
- Build up provincial competencies, and in the interim, have energy and forestry representatives in each province.
- Set up a coordinated programme of policy research.
- Build up local government and devolve responsibilities to it.
- Support pilot projects in integrated rural energy planning.
- Establish a facility to support rural energy initiatives.

1 INTRODUCTION

1.1 Overview of energy planning and policy in Africa

It is a sad fact that initiatives in energy policy formulation and integrated energy planning have an unimpressive track record in Africa. South Africa, too, has its share energy related legislation but not as yet a comprehensive energy policy, nor can it point to successful examples of integrated energy planning. Until quite recently, energy planning was dominated

by crisis management, and strategic planning to ensure adequate stocks/supplies of fuels in the face a hostile international community.

The new political climate in South Africa has thrust new policy agendas and processes to the fore. This paper will focus on the policy development process in the sphere of energy, particularly from a rural development perspective, and try to identify some of the obstacles, bottlenecks and pitfalls. The purpose is to suggest strategies and institutional frameworks which might smooth the path from policy formulation through to implementation.

By what criteria should the success of a policy initiative be judged? The two main ones are: whether the initiative leads to a *process of planning and review on a continuous basis*; and whether the process leads to implementation and concrete progress towards the stated objectives, in this particular instance the *improved delivery of energy services to rural areas*.

There are many extraneous constraints which impinge on the process: political, financial, institutional and logistical constraints. It is constraint, not choice that dictates energy policies in developing countries (Hosier et al 1982). Of these constraints, it is the political ones which are arguably the most significant. As these authors suggest "the energy problem is essentially a political one not a resource crisis". Let us look some reasons why energy policy initiatives, and integrated energy planning have a poor record by these criteria, particularly the latter. The international contributions to the EPRET *Workshop on International Experience in Energy Policy Research and Planning* held in Cape Town in 1992 highlighted many of the pitfalls.

- The energy sector has low political status, and the energy departments are generally young and amongst the least powerful in the administrations of developing countries.
- There is a dearth of trained energy personnel in developing countries partly because of the newness of energy departments, the absence of training opportunities, and leakage of skilled personnel to other spheres.
- The political environment in which energy planning takes place can hinder progress as energy programmes become ensnared in political wrangling. Rural electrification is a prime political football which is liable to be bounced around for less-than-honourable reasons.
- Legacies of the past can create distortions. Past deals and alliances, sunken costs and other historical factors have sometimes obstructed the process, or hindered good planning. Legislation is often out of date.
- Institutional obstacles have been blamed for all manner of failures. In the energy sphere, there is a complexity of actors whose roles need to be understood and co-ordinated. A problem facing many energy authorities is the narrow band of activities over which they have control, and the lack capacity for implementation. They are therefore dependent on more powerful line departments and other bodies for actual implementation, without having an institutional framework or an effective network to make up for their lack of political clout. Their ability to get plans and programmes carried out is limited.
- Even in the energy field, energy ministries/departments have little more than nominal control over the major role players like the electricity utility, or petroleum companies.
- Grant funding for energy programmes is often inadequate for achieving the stated objectives. Large energy developments or programmes may have a multiplicity of donors/funders each with its own *modus operandi*. Major international funders may have policies at odds with the policies of the recipient country. Some energy programmes (eg fuelwood) are dependent on the budgets of other departments. All this conspires against coherent funding strategies for energy, and the best that can be hoped for is somehow to muddle through.

These difficulties, which are generic to energy planning in developing countries, may be experienced to different degrees in South Africa. There certainly are similarities, particularly in relation to rural energy in South Africa, but there are important differences too. South Africa has a well developed electrical utility in Eskom, though some of the electricity supply authorities to the poorer communities are deficient. There is well developed infrastructure serving the commercial sector. The distribution network for commercial fuels is extensive and fairly efficient. South Africa does not experience such acute balance of payments crises, and is better able to afford petroleum imports. There are well established energy institutions in the state, parastatal, private and research sectors. On the other hand, the energy sector has been geared primarily to the needs of the commercial and urban sectors, and there is limited experience and capacity in the area of rural energy. Rural areas, particularly the communal areas, have a low organisational, economic and infrastructural base, and suffer from the whole gamut of poverty constraints which have hindered rural development throughout Africa.

1.2 A framework for problem analysis and strategy development

For the purpose of this discussion, the distinction will be made between policy formulation, planning and implementation.

1 *Policy formulation*: the setting of goals and objectives, formulating principles and guidelines, the establishment of frameworks for planning, also including activities which form inputs to the policy process, such as policy research, data gathering, think-tanks, consultation, advocacy.
2 *Planning*: drawing up strategies, plans and budgets, setting targets, establishing frameworks for financing and implementation.
3 *Implementation* of programmes of action, and delivery of energy services.

Although these appear to constitute a logical sequence of steps, they do not. The process is (or should be) an iterative rather than a chronological one. The three components involve somewhat different sets of actors at different levels of governance. This paper will concentrate specifically on the problem areas within each of these three spheres, and on disjunctions or obstacles between policy, planning and implementation.

2 ENERGY POLICY FORMULATION

2.2 Broadening the policy-making base

The formulation of energy policy is essentially a function of government at a national level. The Minister of Mineral and Energy Affairs and the Chief Directorate of Energy in the Department of Mineral and Energy Affairs (DMEA) have final responsibility for energy policy formulation and the framing of legislation, though there is a tendency now to broaden the base of energy policy formulation.

The first significant move in this direction was the convening of the National Electrification Forum (NELF) in 1993 as an unofficial planning body to discuss and formulate policy on the restructuring of the electricity sector. The Forum included representatives of Eskom, trade unions, civics, the business sector, municipalities, government and the research sector. Though NELF did not have formal powers of policy making, its recommendations to the Cabinet were passed. The composition and operation of NELF reflected the current consultative approach to policy, though the need for consensus and the absence of deadlock-breaking mechanisms hampered its progress. The failure of NELF to get to grips with the

restructuring of the electricity distribution illustrates this. In the end, it recommended a six month period for the issuing or re-issuing of licences for electricity distribution in the apparent hope that the sector would somehow rationalise itself. This is an issue which is particularly relevant to the rural energy debate, and will resurface from time to time in this paper.

At the time of writing, the process of producing an energy policy White Paper is underway, and the finishing touches are being put on a preliminary Green Paper, which will be a discussion document for public debate. The Energy for Development Research Centre (EDRC), the Mineral and Energy Policy Centre (MEPC) and some consultants have been actively involved in drawing up the White Paper together with the DMEA. The White Paper will be informed by 13 position papers which have been presented to DMEA covering governance in the energy sector, the energy supply side, demand side, and a number of other issues including human resources, environment, and energy efficiency.

2.2 Options for a framework for energy policy formulation

Much of the energy policy debate is concerned with structures at the national level. At the core is the issue of where energy fits in relation to other national agendas. One view holds that energy is not an end in itself but input to meet other development goals. Therefore, it has been suggested, the state's energy department should be primarily concerned with regulation and control, and funding of research, while the main policies would take shape in other bodies. The newly promulgated National Economic Development and Labour Council (NEDLAC) might be primarily responsible for policy related to commercial energy, and biomass energy could fall under forestry, agriculture or rural development.

There is, on the other hand, widespread agreement on the need for a national energy planning advisory body. A range of options will be presented in the Green Paper from a small consultative forum advising the Minister to a larger more formalised council advising the DMEA. The advantage of a larger council is that it could include substructures, or working groups. The NELF could be incorporated as one of the working groups along with liquid fuels and others. This would be a particular advantage for rural energy since a working group could be set up around it ensuring that rural issues are not submerged in the business of the big energy industries. The case has also been argued for a group to focus on household energy.

If the larger council option is chosen, the question arises whether it should be simply a policy advisory body. With a substructure of working groups, it would be well positioned to control research budgets as well.

2.3 Select Parliamentary Committee

The role of parliamentary committees is changing. Previously it merely reviewed legislation drawn up by the administration and cabinet, and referred it back if necessary. Now there is a trend towards greater participation of the Select Parliamentary Committees in policy development, and the Mineral and Energy committee has been involved in the formulation of the Green Paper. There is now greater consultation between the committees and the DMEA. The committees have also tried to get feedback from end users.

2.4 Biomass energy

Fuelwood is a primary fuel for most rural households. Yet no department or body has been prepared to grasp responsibility for formulating a coherent policy on biomass energy. The Energy Branch of DMEA (continuing from the former National Energy Council) has supported research on fuelwood and played a leading role in initiating and co-ordinating the Biomass Initiative which was the first integrated and nationwide programme aimed at enhancing rural wood biomass resources. The final synthesis and recommendations of the Biomass Initiative are due to be submitted to DMEA soon. However, DMEA appears to show an understandable reluctance to take the lead in formulating a national policy and strategy. The lessons of the past have been that a strong emphasis on fuelwood production is more of a hinderance than a help, and contemporary strategies of *social forestry* view tree planting and woodland management in much wider context.

The Forestry Branch of the Department of Water Affairs and Forestry has recently undergone major changes to its structure and responsibilities which has included a redirection of effort towards social forestry and promoting village-scale nurseries. The Forestry Branch, however, sees its role primarily as one of active implementation, rather than policy, co-ordination and facilitation.

It is interesting to compare the institutional arrangements for social forestry in this country with those elsewhere. Although the institutional models vary greatly, there are discernable trends internationally:

- towards the disinvolvement of government from direct implementation (the Forestry Branch is moving in the opposite direction);
- towards an integrated rather than a disciplinary approach (the framework for the co-ordination of an integrated programme does not exist here, and no department or organisation has assumed responsibility for co-ordination);
- the retention within government of the responsibility for setting the policy and legislative framework within which rural development/social forestry can take place (it is not clear which ministry/department, if any, will take responsibility for the process in South Africa);
- towards the devolution of responsibility for planning and implementation to communities themselves (this is discussed in a later section).

The issue of a national policy and an institutional framework for social forestry and/or biomass energy is one requiring immediate attention. A forestry policy process is presently underway, and the White Paper on Forestry Policy is imminent

2.5 Policy research

It is widely accepted internationally that the most cost effective investments in forestry development in developing countries are often those in policy research (McNamara 1994). These initiatives have, inter alia, led to a better understanding of the fuelwood issue and to more appropriate policies and strategies of wood biomass management. McNamara's comment probably applies equally to energy policy research as well.

The importance of policy research in South Africa at present cannot be overemphasised. There is a new set of national priorities which is embodied in the RDP. At the same time rigid state structures have been shaken loose, and there is a more open and consultative ethos building up. New role players are emerging on the scene bringing new perspectives to policy

debates, but also a confusion about roles and responsibilities. This confusion is compounded by the realignment of national and regional responsibilities and the re-incorporation of the homelands. In short, this means that both the needs and the opportunities for policy research are much greater than in the past.

Several papers presented at the EPRET *Workshop on International Experience in Energy Policy Research and Planning* emphasised the importance of the relationship between researchers and decision makers. If research is to make an impact, there needs to be a partnership between the two and a structure within which this happens.

There are, of course, many different forms of policy related research (eg institutional research, policy review, futures research, resource analysis) which feed into the policy process in different ways. Policy research itself becomes a policy issue. Who controls the research agenda? How is research funded? The NELF could be structured to play a key role in promoting policy research, and through its working groups/subcommittees provide the forums in which the research-policy dialogue can be conducted.

2.6 Summary of key problem areas in energy policy formulation

The lack of a clear process
There is still no clear process by which energy policy will be evolved. The question of who has authority over what still needs clarification.

The need for a framework
While the need for a framework for policy formulation has been recognised, there is still little clarity or agreement on details of structure, composition, powers, and responsibilities.

National/regional responsibilities undefined
The responsibilities and competencies at different tiers of government is still very unclear. Even the re-incorporation of the homelands has thrown up many unresolved issues.

Implications of new national development priorities
While the RDP is accepted as an overarching principle for policy in South Africa, the precise implications of this for the different sectors are far from clear.

Poor understanding of policy processes
Policy processes in South Africa have changed with the new political climate. There are new role players with fresh perspectives and different agendas. New power balances have not yet been struck.

The submersion of rural issues
The energy policy debates are clogged with the issues of the large energy industries. There is a real danger that issues of rural energy and household energy will be submerged unless space is set aside to deal specifically with these.

3 PLANNING IN THE ENERGY SECTOR

In the planning process, energy supply strategies are tailored to the needs and circumstances of a particular area. The importance of decentralising planning has often been emphasised in relation to energy, social forestry, and rural development in general. There will be elements of planning which are most appropriately carried out at a provincial level, and others which should be decentralised further.

3.1 Planning at a provincial level

The legislative competence at provincial level is very unclear. This is particularly true of the key sectors of energy and forestry. Both of these are designated as national competencies, and have been all but ignored at provincial level. Herein lies a potentially critical obstacle to translating rural energy policy into planning and implementation.

Provincial government will have responsibility for the broad strategies for rural development, and this clearly will have to encompass energy planning. It therefore seems imperative to address the following:

- clarification of the planning and legislative competencies and responsibilities of provincial governments regarding energy;
- the establishment of provincial/regional competencies;
- interim strategies to ensure that energy issues are addressed at provincial level.

It may be necessary, as an interim measure, to have a regional representative of the Energy Branch in each province, attached the Regional Mining Office of DMEA. The person would provide advice and information, participate in energy planning and co-ordinate energy related affairs, possibly through an Energy Committee. This model is favoured by the Forestry Branch, and Forestry Committees have been established in three provinces even though only one provincial administration actually employs a forester. However, the forestry regional offices have to be re-organised on provincial lines instead of the department's former responsibilities in plantation forestry.

This issue of regional competencies raises a further constraint: human resources. While South Africa has a nucleus of trained and experienced professional people in energy planning and administration, it is not sufficient to staff the provinces as well.

3.2 Decentralisation of rural energy planning to a local level

It has been advocated that decentralisation to local or regional levels should be an essential element of rural energy planning and implementation (Thom 1994). This corresponds with concepts about rural development in general (Chambers 1983).

The desirability of local planning is not denied, but there are problems associated with it:

3.2.1 The absence of rural local government

The low organisational base of rural areas, and communal areas in particular, is a fundamental constraint. Two tiers of government are planned. District Councils on a scale similar to the old Regional Services Councils or Joint Services Boards will probably be established quite soon, but the smaller Local Councils are unlikely to emerge for some time since there are so

many outstanding issues to be resolved (eg relationship to traditional authorities, electoral processes, revenue base).

3.2.2 Scale of rural local government

The rural local government units are relatively large, and encompass several Chiefs' wards - about 10 on average in the case of KwaZulu. While this unit of government may be suited to some planning functions, there are others (such as management of natural woodland) which may require a smaller unit.

3.2.3 Powerlessness of rural local government

Local planning exercises are frequently conducted in a vacuum. There are neither the resources nor the political power to ensure subsequent delivery. As McIntosh (1994) points out, strong regional (provincial) government is not conducive to strong local government since political power tends to agglomerate at the regional level.

3.2.4 Cost and logistics

Local rural planning needs skilled facilitation, and it is very time consuming. The cost and logistics of repeating the process for different communities and for different aspects of rural development would be restrictive.

3.2.5 Weak horizontal linkages

In the absence of established forms of local rural government, the suggestion has been put forward that the terms of reference of the proposed water committees (see White Paper on Water Supply and Sanitation, Department of Water Affairs and Forestry 1994) could be expanded to include energy. Similar suggestions have been made with regard to social forestry as well, and there is a legitimate apprehension on the part of the Department of Water Affairs that other sectors are queuing up to "hijack" the water committees. Be that as it may, the debate about single development committees versus a proliferation of committees for different functions raises some important institutional issues. Vertical linkages are stronger than horizontal ones. Therefore a single function committee linked to a single line department is more likely to be able to deliver than a development committee engaged in integrated planning and attempting to co-ordinate horizontally. And since the credibility of a committee depends ultimately on its ability to deliver, it has been suggested that a proliferation of local committees is not necessarily a bad thing, and that in time they will probably rationalise *de facto* into a development committee. The energy line department, however, does not reach down to ground level - it is left dangling somewhere between the national and provincial levels. An energy committee would therefore have to attempt to co-ordinate large organisations from a position of weakness.

3.3 Electricity distribution authorities

The fragmentation of the electricity distribution sector, with some 430 distributors, has long been a source of concern and there have been repeated calls for restructuring in the interests of efficiency. Here some issues related to provincial and to rural local government are raised.

3.3.1 Electricity distribution and provincial government

At issue is the relationship between the large distributors which would be created by rationalisation, and provincial government. Since the provinces are responsible for rural development planning, it is important that the mechanisms be in place for co-ordination of electricity distribution and planning at a provincial level. However, Steyn (1994) warns that making the boundaries of the large distributors co-incident with provincial boundaries exposes the distributor to possible political tension between national and provincial government.

3.3.2 Electricity and rural local government

Debates about restructuring electricity distribution, have tended to overlook the role which electricity should play in the emergence of rural local government. The main functions of rural local government will be in planning and the delivery of services and development resources, of which electricity can contribute as much as anything to the credibility, capacity and revenue base of local government. The possible role of local government in planning, administration, setting standards, fault reporting, revenue collection, processing applications for example, should be explored in depth.

4 IMPLEMENTATION

Much of the discussion on planning in the previous section applies to implementation as well, particularly with regard to local government, and similarly much of the following discussion will have relevance to planning.

As with planning, the problems are related to a lack of capacity at local government level. The strategies indicated are: to build up that capacity, to build relationships between funding and delivery institutions and local government, and where possible to link rural energy projects to other development processes.

4.1 Facilitating and financing access of rural communities to renewable energy

The access of rural communities to renewable energy technologies is particularly poor, partly because of cost, and partly the lack of contact with suppliers. To address this problem, a facility has been proposed to help with access and finance. The *South African Agency for Funding and Implementation of Renewable Energy* (SAFIRE) is envisaged as state-owned yet autonomous Section 21 Company within the legal framework of the Central Energy Fund (CEF). The primary objectives are project planning support, motivation and negotiation, implementation, and the mobilisation of funds through a revolving credit fund. Initially it is proposed to focus purely on small electrical RAPS systems, but when it is up and running the terms of reference may be broadened and possibly include non-renewables. The potential exists, therefore, for it to grow into a national support facility for rural energy.

Although SAFIRE could support projects which focus directly on fuelwood, a funding facility for the more open-ended social forestry projects is also needed. Various options are open, ranging from a purely funding facility, to a body concerned with policy, planning support, and funding. Such a body could be located within a restructured Forestry Council.

4.2 Financing rural electrification

It has been suggested in various quarters that because rural electrification embodies issues sufficiently different from those in urban and commercial sectors, it might be put in a separate utility or in a separate unit within existing electricity distribution agencies. The crucial issue is that rural electrification is a net financial drain in the medium term at least. A financially strong utility can carry a lot of the costs through this period, but there is potential conflict between national policy to make electricity as widely available and affordable as possible, and the fiscal concerns of the utility. It has been recommended that to increase the level of access to electricity significantly, it will be necessary to allocate finance through a proposed National Electrification Fund (van Horen 1994).

4.3 Pilot projects for integrating rural energy and development

A comprehensive and integrated approach the planning and implementation of rural energy projects in the context of rural development can only be tackled on a pilot project basis at present, given the poorly developed state of rural local government, the limited human and financial resources available, and the unproven methodologies. Such rural energy pilot projects should be linked to specific rural development projects which have sufficient resources to make an impact. The Provincial pilot projects on land reform, or the Presidential Lead Projects on land restitution offer promising opportunities for thorough rural energy projects linked to rural development initiatives.

With the lack of regional competency in rural energy planning and delivery, it would probably require external intervention to initiate an integrated rural energy pilot project, and subsequent external support in resources and expertise.

There is a danger of pilot projects diverting development resources away from other needy areas, and there are legitimate concerns that instead of shining stars, they become black holes swallowing resources and generating such gravitational fields that it becomes difficult to extricate from them. Nevertheless, there is much to be gained from properly planned, well run and demonstrably reproducible pilot projects.

5 SUMMARY OF THE MAIN RECOMMENDED STRATEGIES

This summarises the main strategies advocated to facilitate the energy policy formulation process and to follow it through to an on-going programme of energy planning and implementation.

- Pursue the formation of a National Energy Policy Council/Forum with subcommittee(s) for rural and household energy
- Clarify national and provincial legislative and executive responsibilities
- Establish regional competencies
- Build local government capacity for planning
- Promote the capacity of utilities, facilities, private sector bodies deliver energy services to rural users
- Formulate a planned and co-ordinated programme of energy and policy research
- Implement pilot projects on integrated rural energy and development

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PAPER 3

The status of the energy and rural development research sector

Cecile Thom & Ulrike Kidgell

SUMMARY

This paper highlights a range of issues which need to be discussed concerning research in the field of energy for rural development:

Guiding principles

It is proposed that the following principles should guide research and the funding of research in this field in the future:
1) Respect for rural energy users should guide all research activities.
2) Research should not be exploitative of the people from whom information is obtained.
3) Rural energy users should play a meaningful role in identifying research priorities as well as conducting research activities.
4) Research planning by public institutions in particular should be coordinated nationally.

Research approaches and methodologies

It is proposed that greater emphasis should be placed on the use of qualitative, participatory and action-research approaches in future energy research. The potential contribution and role of participatory research which draws, among others, on the approach and methodologies used in Participatory Rural Appraisal (PRA), should be considered in particular. The ethical considerations when using PRA methodologies need to be taken into consideration.

Research priorities

The following areas of research have been identified as requiring most research attention at this stage, in addition to aspects of rural electrification (including both grid and non-grid options) which will be covered during a few major research projects launched recently:
1) Energy end-use (the purposes for which energy is used) and longitudinal trends (changes with time) in energy use
2) The social context and social determinants of energy use
3) Energy and rural development linkages
4) Rural energy planning (including Integrated Energy Planning)
5) Improving access to fuels and appliances (including efficient appliances)
6) Addressing safety/health problems related to energy use
7) Capacity building and support services in rural areas
8) Research methodologies

Specific suggestions are made on aspects which require research in each of these broad areas. In this, emphasis has been placed particularly on:

1) developing an in-depth understanding of various aspects of energy use to inform policy as well as the development of specific implementation strategies; and
2) developing practical and organisational strategies by which policy can be implemented at a local level in rural areas;
3) financial and institutional aspects of improving energy service provision.

As this would constitute a major shift in the research focuses of the sector, while requiring the use of participatory and action-research approaches, it needs thorough consideration.

Research institutions

The most significant problem with the current processes by which research priorities are identified within public institutions funding energy research, such as the Department of Mineral and Energy Affairs and Eskom, seems to be the lack of (meaningful) involvement by energy users and other stakeholders. In the case of Eskom this is compounded by a lack of transparency in the process, including the allocation of research funding and the evaluation and dissemination of research findings.

The most significant problem within the research community involved in this field appears to be the lack of skills and capacity to conduct energy research of a qualitative nature, and particularly participatory research in rural areas.

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1 INTRODUCTION

The purpose of this paper is to provide some background to discussions on the research sector concerned with energy for rural development, and particularly research principles and priorities in this field, which are to take place at the workshop on Energy for Rural Development. The paper does not cover these matters comprehensively, but attempts to raise particular issues which need to be discussed. Among other things, it sets challenges and ideals for the research sector which would be difficult to achieve in the face of institutional and financial constraints. However, we hope that there will be a serious attempt at the workshop to face these challenges and to move towards addressing the issues raised here.

In the light of the current situation in rural areas with respect to socio-economic conditions and energy use patterns in particular (see pre-workshop paper on "*Status of energy & rural development sector*"), and the focus of the present government on alleviating poverty in partnership with the potential beneficiaries of development, the aims of the energy sector need to be the following:

- to ensure that the majority of rural people, and particularly the poor and women, gain access to improved energy services for domestic purposes
- to ensure that all community or service facilities acquire the energy services needed to provide the desired services
- to ensure that the provision of energy services stimulate the local economy, by addressing the energy needs of informal and micro-enterprises in particular, and by developing local employment opportunities related to the energy sector

- to ensure that rural energy users become active participants and determinants of improvements in their energy services

These goals present an enormous challenge to the sector, both with respect to the areas on which research needs to focus, and the manner in which research is conducted.

2 GUIDING PRINCIPLES

The role of research in the process of improving energy service provision in rural areas is a varied one: Broadly speaking, the purpose of research is to provide an understanding of rural energy and development issues which informs planning and policy making. More specifically, research should inform policy, and should therefore be focused in areas where policy development is required. Furthermore, research should inform the design of particular programmes and initiatives to implement policy. Finally, it is possible to argue that research could and should stimulate development at the local level by unlocking information present within rural communities, and by creating greater awareness of opportunities that exist for addressing problems.

It is suggested that the following principles should guide research and the funding of research in this field in the future:

1. *Respect for rural energy users should guide all research activities.*

   Rural people should not be treated as objects of research. On the contrary, their knowledge and understanding of their situation, their views, concerns and priorities with respect to possible changes etc should be respected, and their vital role in developing an understanding among "outsiders" of the complexities of their lives, as well as more successful ways to address problems, need to be recognised. Irrespective of the nature of the research, there should be a commitment on the side of the researchers as well as the funders to communicate the findings of the research in a meaningful way to the local people with whom the research was concerned.

2. *Research should not be exploitative of the people from whom information is obtained.*

   Research which involves rural people directly should be well-motivated and purposeful, and be approached in a sensitive manner, so as not to add to the burden of people unnecessarily. Where possible, research should be linked to ongoing development processes, and/or to planning and evaluation processes which form part of the implementation of projects. Alternatively, it should lead to initiatives to address matters raised during the research project. Possible follow-up projects could be identified during the research process, and/or a development agency active in the area could be drawn into the process. Nevertheless, it is recognised by adherents of the participatory approach to development that the information generated during participatory processes can in itself be of value to the local people involved, if this information is "owned" by them, e.g. if information of particular importance to local people has also been generated, if greater awareness and understanding of the problems facing them have been developed etc.

3. *Rural energy users should play a meaningful role in identifying research priorities as well as conducting research activities.*

   Users need to be involved to a much greater extent in defining research priorities, designing research projects, generating, analysing and interpreting the information etc. This involvement needs to be structured in an appropriate way to ensure that it is meaningful and does not only include particular groupings (i.e. "alibi-participation"). For example, research priorities of rural people cannot be identified at a single national workshop, but should possibly be done by means of multiple sessions involving different focus groups in a participatory manner. The involvement of energy users in the design and analysis/interpretation of research is an integral part of a participatory research approach, and could also be followed with other research methodologies.

4. *Research planning by public institutions in particular should be coordinated nationally.*

   This is necessary to ensure compatibility and comprehensiveness, and to avoid unnecessary duplication. In the past research has often been of an ad hoc nature, as is reflected, for example, by the incompatibility of much energy and electricity data which have been collected during surveys. While planning and coordination has improved within institutions which fund research, there is still a great need to coordinate research, particularly across institutional boundaries. Research priorities and research methodologies also need to be agreed upon at a national level by the various public institutions involved.

3 RESEARCH APPROACHES AND METHODOLOGIES

Research has tended to be of a formal academic nature in the past, including formal questionnaire-based surveys, as well as techno-economic assessments. Clearly there is a role for this type of research. However, the severe limitations with respect to the information generated in this manner need to be recognised. In particular, it fails to capture the context in which energy is used, and the complexities which need to inform the planning of strategies and interventions. It also assumes that appropriate strategies and interventions can be developed by specialists with little input from rural people apart from the information extracted from them in formal assessments.

There is a need for a shift in emphasis to qualitative, participatory and action-research approaches in order to overcome these limitations. Participatory research methodologies which draw, among others, on methods used in Participatory Rural Appraisal (PRA) are particularly valuable for identifying important matters which escape conventional research methods, and for drawing on rural people's insights with respect to their own situation and the possible impact of changes. Moreover, participatory research provides the opportunity for researchers to be agents in the development process, by unlocking information present within rural communities and increasing the awareness of local rural people about possibilities available to them.

It should be stressed, however, that the use of participatory methodologies and "techniques" in itself does not constitute a participatory approach. A participatory approach implies a commitment to the people with whom the research is concerned, and an embracing of their priorities and concerns, and the need to enable them to address their needs and problems. It is therefore important that the ethical considerations when using these methodologies are thoroughly debated in the energy sector, possibly linking with similar but more advanced discussions in other development sectors.

4 RESEARCH PRIORITIES

It had not been possible to conduct a detailed research audit during this study, because of resource limitations. Some of the main players regarding research in this field were approached to assist with a research audit, including public sector bodies which fund research, such as the Department of Mineral and Energy Affairs (DMEA) and Eskom, and research organisations such as the Energy for Development Research Centre (EDRC) and Data Research Africa (DRA). However, concise documentation on the research areas which have been covered in the past were in many cases not available. The DMEA has mainly supported the following broad research areas in the past:

- The assessment of alternative energy resources, including wind, solar and biomass.
- The development and assessment of alternative energy technologies, particularly remote area power supply (RAPS) systems.
- The collection of energy consumption and expenditure data, mainly pertaining to domestic users in the former homeland areas, by means of formal questionnaire-based surveys.

In addition, the assessment phase of the Biomass Initiative or "Plant for life" programme has focused on aspects such as assessing woody biomass resources, assessing patterns of energy use and consumption of fuels, as well as wood for construction purposes, evaluating tree production and delivery systems, disseminating information on tree planting, the commercialisation of fuelwood supply, and woodland management strategies. The development of a policy framework for social forestry is also at an advanced stage.

A wide range of issues concerning energy for rural development has been identified as requiring research attention, drawing on research reports, the 1994/5 Business Plan of the DMEA, and personal contributions by researchers and others involved in the field. A number of research themes have been identified, with some degree of overlap between these. For example, the need for research into financial and institutional aspects of energy service provision is a constant refrain, but this has not been identified as a separate research theme.

A few major research programmes concerning rural electrification (including both grid and non-grid options) have been launched recently, and are expected to address some research gaps which have previously been identified. Two projects conducted by the EDRC will investigate financial and institutional issues, as well as develop methodologies for cost-benefit analyses and project evaluation, and development and energy planning frameworks for rural electrification. Summaries of the planned outputs of these research projects are provided in an Appendix. Eskom has also launched a major research project to provide national data to inform electricity planning, particularly to overcome problems with the reliability of data which have been collected in the past. In the light of the considerable attention which is therefore being given to rural electrification, the discussion that follows will mainly focus on other areas where research is needed.

4.1 Energy end-use and longitudinal trends in energy use

Generally there is a need to "interrogate" available information on energy consumption and expenditure patterns to gain maximum benefit from past research. Aspects which require particular attention in the future include the purposes for which energy is used (i.e. energy end-use) such as cooking and lighting, and changes in energy use over time (i.e. longitudinal trends), including changes in electricity consumption.

Information pertaining to energy end-use is of great importance for the purpose of developing an understanding of fuel use patterns, and the changes over time and/or as a result of interventions,

e.g. electrification. Quantitative end-use information (i.e. the quantities of fuels used for different purposes), as well as qualitative end-use information (e.g. on cooking practices) is required. The following matters in particular require attention:

- The utilisation of energy for particular purposes within end-use categories, e.g. to heat water for bathing, making tea, washing dishes etc. There is a need to define the particular requirements for these services, for example the need to conduct cooking and water heating speedily in the mornings. Fuel preferences for particular purposes, e.g. the use of fuelwood for the preparation of particular foods, also need to be investigated.
- The cooking system of which the fuel-appliance combinations used for cooking purposes form one element. Other elements include the kind of foods prepared, the methods of food preparation and cooking, and the location and structure of the cooking site. There is a need particularly to "interrogate" the observations regarding cooking and other practices which have been made in energy surveys in the past.

4.2 The social context and social determinants of energy use

Various matters are included here, which are generally related to the social context within which energy is used. The following aspects require attention:

- Demands on the domestic time budget, particularly of women and children. These may not be directly energy-related, but have an impact on how fuels are acquired and used. Domestic as well as productive (subsistence and income-generating) activities need to be included.
- Decision-making processes within households concerning the allocation of cash and labour resources to acquire and use fuels and appliances, and particularly the impact of power (including gender) relations on these decisions.
- Multiple fuel use and regular fuel switching, with particular emphasis on the motivation for these practices, the possible influence of changes in household structure, as well as seasonal trends in fuel switching.
- The perceptions of users with respect to energy needs, problems and priorities need to be explored.
- The influence of dwelling materials, forms/structure and function on energy use.
- The impact of policy interventions, such as the introduction of electricity, on energy users and the broader society. The impact on intra-household and societal power relations, and its comparative impact on poorer and more affluent sectors of the society need specific attention.

4.3 Energy and rural development linkages

The following matters need attention in particular:

- The relationship between energy use patterns and the associated demands on household resources, and the ability of households to meet other basic needs. In particular, the impact of fuel shortages and high energy costs on nutrition and hygiene needs to be investigated.
- Energy provision to meet water pumping needs in rural areas. In particular, the use of different energy systems, utilising conventional as well as renewable energy sources, need to be investigated in practice to compare real costs and benefits in the light of maintenance requirements etc.
- The energy requirements of home-based and other informal income-generating activities. Attention should be given to the possible contribution of improved energy provision to the expansion or improvement of such enterprises.

- The linkages between an overall development policy/strategy and the provision of infrastructure/services (including energy) in rural areas.

4.4 Rural energy planning

Recently some recommendations have been made with respect to the nature and role of rural energy planning (REP) in South Africa, and particularly the need for decentralised and participatory energy planning in rural areas, which should be complementary to formal aggregate Integrated Energy Planning (IEP). However, considerable research is still required in this area, particularly with respect to the following:

- The degree to which formal aggregate energy planning needs to be decentralised, i.e. whether provincial governments or sub-regional/district authorities should take primary responsibility.
- Institutional models for the planning and coordination of energy service provision at different levels of government, including its coordination with other development sectors and the Reconstruction and Development Programme (RDP), and the roles of the DMEA, RDP structures, and rural local government in this regard.
- The nature (particularly with respect to the involvement of users) and cost-effectiveness of current rural energy planning processes, in government departments, Eskom and the Independent Development Trust (IDT).
- The specific nature of the processes which have been proposed, the effective involvement of women in these processes, and the roles of different agencies, including energy supply agencies and community-based organisations.
- The nature of the linkages required between the formal aggregate planning process, and participatory energy planning at the local level.
- The support functions required to facilitate participatory energy planning at the local level, e.g. the role of facilitating agencies and decentralised "energy planning offices". In particular, the possible utilisation of existing facilitation capacity in rural areas, and the possible decentralisation of the DMEA, need to be investigated.
- The integration of electrification planning into energy planning at the local level, and the cost-effectiveness of redirecting some of the public resources currently utilised to initiate, drive and plan electricity projects in rural areas for the purpose of conducting open-ended needs-based energy planning which will address a wider range of energy needs.
- Capacity and training requirements in the energy for rural development sector, including the public and private sectors, civil society and the services sector, to enable the implementation of rural energy planning.
- The establishment of pilot-projects to develop and assess the proposed approach, as well as suitable institutional options.

A project to develop "an in-depth understanding of the practical requirements for implementing Integrated Energy Projects in South Africa" is in progress at the EDRC. This focuses on issues such as implementing IEP methodology, the institutional framework required for this purpose, and the criteria for targeting areas for electrification. This clearly constitutes an important input to further research in rural energy planning.

A related matter of importance concerns the decentralisation of control over processes by which public funding is allocated to rural energy projects, including electrification projects. Recently some guiding principles as well as mechanisms by which this could be realised have been proposed. These require further investigation, particularly to propose alternative processes and appropriate institutional arrangements. Current processes by which such funding is allocated by institutions such as Eskom, the IDT, the DMEA and the Development Bank of Southern Africa (DBSA), should

also be reviewed in the light of the proposed principles and objectives, and the alternatives available.

4.5 Improving access to fuels and appliances

Access is defined here as including both the availability (i.e. distance from users) and cost (i.e. affordability to users) of fuels. The following matters require attention:

- The nature of distribution networks and the pricing structure of hydrocarbon fuels as well as energy commodities such as appliances and batteries, particularly in "deep" rural areas. The role and significance of informal sector traders in the supply of fuels like paraffin, and the potential impact of policy interventions on their livelihood, need particular attention.
- The nature and potential impact of models for the supply of commercial fuels and energy articles to remote rural areas at reduced cost, e.g. the establishment of community bulk-buying co-operatives.
- The development and piloting of models for community-based monitoring and reporting of transgressions of regulated prices, e.g. in the case of paraffin and possibly liquid petroleum gas (LPG).
- Access to efficient and user-friendly appliances in rural areas, as well as information regarding the efficiency, and correct usage and maintenance procedures that should be followed. Possible modifications required to the proposed strategy of labelling appliances should be investigated in the light of specific needs of rural energy users.
- The development of incentives to facilitate access of rural people to appropriate credit in order to obtain and maintain relevant energy technologies, including appliances of choice.
- "Best practice" by rural people with respect to more efficient and safe ways of utilising fuels. The potential impact of such activities if it were to be encouraged on a wider scale, need to be assessed.
- The establishment of decentralised woodlots by institutions serving rural communities, such as municipalities, rural local government and/or the Department of Forestry, as an integral part of infrastructural development in rural areas, should be investigated in the light of planned changes in institutional arrangements in rural areas. The feasibility and potential impact of such a programme as a strategy to meet the basic energy needs of the poorest, need to be investigated.
- Support systems required by players involved in the distribution of commercial fuelwood, such as wood merchants and timber contractors.
- The feasibility of applying various indigenous woodland management strategies/models in South Africa, particularly models which do not include an income-generation element, need to be investigated. The weak state of traditional systems aimed at managing the natural resource base in most parts of South Africa need particular consideration.

4.6 Addressing safety/health problems related to energy use

As all energy sources have associated health and/or safety risks, strategies to address these need to form an integral part of energy service provision. Of particular importance in rural areas are problems such as paraffin poisoning, burns, and respiratory illnesses related to smoke from woodfires. Problems of inconvenience, e.g. during cooking, and dirty/unhygienic indoor conditions can also be included in this category. The following matters need attention in this regard:

- An understanding is required of practices of collecting, storing and using fuels/appliances which have implications for health and safety, as well as general domestic behaviour which can increase the risks involved. Practical and behavioural constraints to addressing problems need to be identified.

- Users' perceptions of these problems, their priorities in this regard, their way of preventing accidents and dealing with it, and their views and suggestions regarding ways to address the problems, need to be assessed. It is necessary to define criteria for improvements from the users' perspective.
- A number of practical measures to prevent paraffin poisoning have been identified, including the distribution of child-safe bottle caps, and the introduction of special safe containers. The practical feasibility of these measures needs to be evaluated in the light of the contextual information mentioned here, and by assessing preliminary responses of rural energy users. Promising strategies should be evaluated by means of pilot-projects.
- The feasibility and potential impact of strategies to encourage the usage of safe paraffin containers need to be investigated, e.g. packaging incentives and legislation enforcing the use of safe containers.
- In order to address problems related to woodsmoke, an understanding is required of factors such as the layout and ventilation characteristics of the kitchen or cooking area, cooking practices and preferences, combustion efficiencies etc. The acceptability and impact of possible changes to these aspects need to be investigated, as well as the possible introduction of hoods, chimneys and/or woodstoves.
- The feasibility and potential impact of enforcing safety regulations pertaining to the distribution of LPG in rural areas, e.g. by locating the primary responsibility for safety enforcement with the supply companies.
- The development and piloting of models for the establishment of community-based mechanisms to disseminate information on energy use, including safety and efficiency aspects, and the monitoring and reporting of transgressions of safety regulations etc. The involvement of formal and informal traders which supply fuels in rural areas in such initiatives should receive particular attention.
- The respective roles of the energy and health sectors with respect to these matters, and the coordination of these functions need to be investigated.

4.7 Capacity building and support services in rural areas

The following matters should receive attention:

- The availability of local capacity in rural areas for the maintenance of appliances and other technical support functions, and models for the training and support of entrepreneurs to perform such functions.
- The development and piloting of models for extending the services provided by different types of rural service centres to include energy information dissemination, energy advisory services, the training of entrepreneurs etc.
- The development and piloting of strategies for the dissemination of energy information etc, including the involvement of community-based organisations and the utilisation of existing structures (e.g. community health workers as well as local suppliers of fuels/appliances).
- The need for capacity building and the support of local organisations and institutions in rural areas, including rural local government, in relation to negotiations with supply agencies.
- Evaluating and supporting, where appropriate, local initiatives by individuals and organisations in rural areas aimed at relieving energy shortages and related problems, such as the use of waste paper for making fuel blocks/sticks, the construction of woodstoves etc.

4.8 Research methodologies

The following methodologies need to be developed, or require further attention:

- Cost-effective methodologies for assessing wood resources, which can be applied locally to achieve reliable results, particularly with respect to the fuelwood component.
- A consistent analytical framework and methodology for survey-based energy and electricity research, to ensure that all data collected is compatible and adds value to existing planning databases.
- A consistent and reliable methodology for assessing the consumption of fuelwood by rural people.
- Energy planning methodologies, including both formal IEP methodologies, and participatory planning methodologies. The latter should include methodologies for needs/demand assessment as well as the involvement of local people in the selection of technical options and the adaptation of designs.
- Methodologies to assess the impact and evaluate energy projects after implementation.
- A body of knowledge need to be developed concerning the utilisation of research methodologies other than conventional questionnaire-based surveys for the purpose of energy research, i.e. qualitative, participatory and/or action research methodologies.

5 RESEARCH INSTITUTIONS

It is possible to distinguish between four groups of institutions involved in the research process, although some overlap exists between these: funders, researchers, implementing agencies and community-based organisations. This discussion will focus mainly on the funders of research, particularly public institutions such as the DMEA and Eskom, and to a lesser extent the research community.

5.1 Department of Mineral and Energy Affairs

The Energy Chief Directorate of the Department of Mineral and Energy Affairs (DMEA) is at present the major public funder of research projects concerned with energy for rural development generally. Details of the Department's procedures with regard to the acceptance of proposals, the evaluation of research reports etc are provided in the document "Guidelines for energy policy projects" produced annually by the DMEA. These will briefly be discussed here:

No formal procedure exists for the identification of research priorities. These are generally compiled by the DMEA internally, based on inputs from staff and other specialists, research reports and workshops. The priorities are announced in the "Guidelines" document, which is circulated widely to the research community. The process by which research projects are approved and evaluated, can be summarised as follows:

1. Submission of a preliminary project proposal, which is evaluated internally to assess its potential contribution in terms of the identified research needs and priorities.
2. Submission of a formal project proposal, which is assessed internally as well as by external specialists. The following criteria are used:
   - importance/relevance in terms of the programme priorities, and contribution to the goals of the DMEA
   - clarity, realism of outputs, logical and clear identification of the project research process

- identification of key receivers and criteria against which they would measure the value of the project
- time frame
- funding requested
- capacity and capability of research team

3. Acceptance/non-acceptance of proposal.
4. Progress is monitored mainly by means of six-monthly reports. This is done internally only, although in some cases outside specialists may be involved. The quality of the report as well as the quality of the research are assessed in order to determine whether the project should continue, be discontinued or be amended.
5. The final report is always evaluated both internally as externally, according to the following criteria:
   - Quality of the report: visual impression/clarity/language use/compliance with format requirements
   - Quality of the research: Execution in terms of the original proposal/negotiated amendments
   - Quality of the outputs: Logical relationship between conclusions and recommendations, and data and/or analysis
   - Cost-effectiveness: Value for money
6. An ex-post facto evaluation is conducted internally, mainly to assess the contribution of the project to the objectives of the research programme, of which the most important are those of policy-formulation and implementation. Follow-up actions and/or activities are also planned.
7. Dissemination and communication of results.

Although the system appears to be logical and simple, there are a number of shortcomings which will be briefly discussed:

(a) Interest groups such as implementing agencies and energy users are not significantly involved in the research planning process. Although the system offers the opportunity for inputs from outside the DMEA, this is not formalised. There is a need to actively facilitate the involvement of groups other than researchers, and particularly energy users.

(b) It is a time-consuming process. Often weeks and even months pass between the submission of a proposal and its acceptance. From the perspective of the proposers, this is not only frustrating and demotivating, but it also hampers their planning in terms of time and staff. With regard to final reports, the situation is often worse.

(c) The evaluation system relies on the goodwill of evaluators, who are paid a nominal fee as a gesture of thanks, but are not compensated for the time spent on the evaluation. Very often superficial evaluations or no evaluations at all are received. While this cannot be blamed fully on the poor payment, it most probably is a contributing factor. It may be worthwhile to investigate incentives to improve the quality of evaluations, of which a more realistic fee for services delivered may be one option.

(d) The pool of adequately knowledgable people to perform evaluations is very small. The evaluators are either energy or development experts - very few evaluators have both technical skills and an understanding of matters of a more social nature. One possible way to increase this pool would be to make use of evaluators from abroad (which has been tried on a limited scale), but this would only provide a partial solution, and would result in further delays in the process.

(e) A further implication of the above is that the pool of evaluators corresponds largely with the pool of researchers which undertake the research, resulting in a lack of objectivity when evaluating the work of fellow-researchers who compete for limited research funds.

(f) The Directorate: Energy for Development lacks the capacity to manage the process adequately. The Directorate has a staff contingent of eight, including two administrative staff members, who are responsible for the whole area of energy for development, including renewable energy sources. Consequently, the management of projects is virtually reduced to the evaluation of reports. An on-going process of communication between DMEA staff, particularly those involved at the project level, and the researchers (and possibly potential implementing agencies and beneficiaries of particular projects) is required.

(g) The funding system poses potential problems: The acceptance by the Department's Directorate of Finance of a system which allows for multi-year projects to be undertaken and unspent funds to be carried over from one financial year to the next has certainly been an improvement. However, the actual allocation of funds for the second and third years of a multi-year project is not guaranteed, but is dependent on the availability of funds. Should the research priorities suddenly be changed, it could well be that a project of this nature has to be discontinued. Once again, from the proposer's perspective, this uncertainty makes longer-term planning difficult.

5.2 Eskom

Eskom is a major player with respect to research in this field, particularly concerning rural electrification. Research funded by Eskom is either conducted in-house, or by external consultants or research institutions. Eskom's TRI (Technology Research Investigations) conducts and funds research on alternative forms of energy as well as mainly technical aspects of rural electrification, such as distribution technology. A procedure for identifying research priorities, allocating research funding and reviewing projects is in place: A steering committee comprising specialists from Eskom as well as academic institutions is appointed to oversee this process within each area of research. Stakeholders in the research are widely consulted to identify priorities in each area.

The management and coordination of all research involving customers of Eskom has recently been centralised under the Marketing Intelligence (MI) Department. The procedures by which the MI Department will identify research priorities and allocate research funding are being finalised at the time of writing this paper. These functions are fulfilled by an internal steering committee which screens requests for research by the various departments in Eskom. Research priorities are identified internally on the basis of the needs of the different departments.

The lack of "transparency" in the process of research planning and management within Eskom, particularly as far as information on rural users of electricity (and energy) is concerned, seems to be of some concern. In light of the fact that Eskom is a public corporation, it could be argued that stakeholders such as the state as well as energy users, need to have a more significant role in determining the research priorities of the institution.

5.3 Researcher community

A variety of research bodies are involved in the field, including private consultants, researchers at academic institutions, energy supply agencies such as Eskom, para-statal research organisations such as the CSIR, and development organisations. Probably the most important problem with respect to the research community, is the lack of skills and capacity to conduct energy research of

a qualitative nature, and particularly participatory research in rural areas. Researchers are generally based in urban areas and are not skilled with respect to participatory methods. On the other hand, development organisations based in rural areas which in some cases have the skills to conduct work of a participatory nature, generally lack the expertise and the human resources required.

Other problems which exist, include the inability of researchers to locate the research process and to interpret research findings within a broader policy framework, the absence of a common analytical framework which informs the design of research, as well as the interpretation of findings, and an urban bias when conducting research in rural areas.

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APPENDIX to PAPER 3: Rural electrification projects to be conducted by the Energy for Development Research Centre at UCT

The role of electricity in the integrated provision of energy to rural areas

Primary output: A public policy framework for rural electrification in South Africa and practical guidelines for funding and implementing agencies.

Aspects to be covered:
Reviewing international and South African experiences with rural electrification.
Developing a database that will assist in rural electrification (and energy) planning.
Conducting case studies of different categories of rural electrification projects.
Developing a rural development framework to guide a rural electrification programme.
Reviewing the state of technology applicable to rural electrification, with particular attention to the feasibility of using Remote Area Power Supplies (RAPS) and renewable sources of energy.
Developing an Integrated Energy Planning (IEP) framework of which RE is one element.
Developing a cost-benefit analysis (CBA) approach which can be applied to the evaluation of RE in South Africa.
Developing principles or procedures which should guide electrification agents during the implementation of projects.
Developing a methodology to evaluate electrification projects subsequent to their implementation.
Developing RE scenarios and conducting financial modelling to assess impact on utilities' financial status, and appropriateness of subsidy policies.
Developing a subsidy policy aimed at compensating utilities for the extra financial burden of undertaking RE projects.

Photo-voltaic household electrification programme: Phase 1

Activity areas:
1. An organised solar home systems (SHS) dissemination project
2. A techno-economic support study

Purpose of activity 1:
To demonstrate organised SHS dissemination.
To select and test appropriate dissemination, planning and finance strategies.
To help to assess end-user demand for SHS, and user satisfaction.
To provide a platform for information dissemination to potential user communities, rural energy development organisations, and policy-makers.
To establish a platform for solar electrification policy development and strategy enlargement.

Outputs of activity 2:
Evaluating the demand for SHS in South Africa.
Analysing financial, economic and social costs and benefits, and whether there is a case for subsidising solar home electrification.
Determine technical and logistic supply and maintenance capacity for rural solar home electrification, and help to address existing constraints.
Analyze accessible rural financing options for SHS acquisition.
Recommend suitable authority structures and institutional responsibilities for expanded solar electrification.

PAPER 4

The RDP policy with respect to rural development and energy

Peter Ngobese (RDP office: Rural Development)

1 INTRODUCTION

1.1 Energy and Rural Development Challenges facing South Africa

The South African Government of National Unity (GNU) is faced with the challenge of addressing historical imbalances and ensuring social integration and development. In this context one of the GNU's priorities is to transform and establish new institutional arrangements and policy framework for rectifying the imbalances. The transformation will also include as a major component, capacity building to ensure that the development process is people-centred and driven.

In the fields of energy and rural development, for instance, such an approach will require substantial investments on the supply side given the fact that only 40 percent of South African households have access to electricity, for instance. Forty percent of the country's population resides in rural area where the primary energy source is biomass such as wood and dung. Given the demographic pressures on to this resource base any rural development strategy would seek to relieve such pressures.

1.2 The RDP as A Response to the Challenges

The Reconstruction and Development Programme (RDP) which has been accepted as the policy of the GNU and can thus be seen as a response to the country's development challenges in general and in the energy and rural development sector in particular.

1.3 The Rural Development and Energy Policy Framework

The White Paper on Reconstruction and Development provides a policy framework within which to situate rural development and energy. In both these areas a common vision on rural development areas a common vision on rural development and the provision of energy needs to emerge.

In this respect, therefore, the importance of broad consultation as reflected in the White Paper is a priority. By providing this broad framework the GNU is expecting that more detailed policy formulation will ensue, obviously informed by the critical needs in this particular sector.

2 THE RDP THRUST

The RDP focuses on meeting the following objectives :

- Basic needs
- Effective service delivery
- Democratisation of the State, and
- Capacity building

2.1 Meeting Basic Needs

The RDP White Paper states that one of the basic principles of the programme is meeting basic needs through popular participation and increased access to resources. There is a recognition that poverty and environmental degradation are interlinked and that poverty is the major cause of environmental degradation. This recognition that poverty alleviation is central to any effort to promote development as reflected in the RDP provides the basis for strategy. Thus, the provision of energy that does not degrade the environment is a useful indicator of development. Since energy is a "primer" and a prerequisite for development, its general access is integral to the realisation of economic and social rights to development.

2.2 Effective Service Delivery

In order that there is increased access to resources, in particular energy, distortions in the country's energy support and delivery system need to be identified and rectified. Effective service delivery in the respect is going to be predicated on some measure of institutional reform. The appointment of an Electricity Regulator, for example, being a case in point.

2.3 Democratisation of the State

Therefore, the democratisation of the State is an essential element to ensuring increased access to resources. The RDP White Paper proposes that the restructuring of Government and its institutions should be a necessary step in this process. Such democratisation should go beyond just focusing on mere representivity, but should embrace the need for diversity in form and content. In terms of the provision of energy there is need to look at broadening options and creating and enabling environment for diversity to flourish.

2.4 Capacity Building

On the other hand, in order for the State to become more responsive to a broader clientele that clientele should also be equipped to take full advantage of such services. Human resource development and capacity building in this respect becomes important. Given the fact that the majority of people in rural areas impacted by energy decisions at the centre are women, a gender focus has to be included in any strategy seeking to address problems of energy in rural development. Capacity building with a gender orientation is therefore important.

3. THE RDP STRATEGY

Given the fact that capacity building is a key component of the RDP, the strategy has been to initiate programmes that firstly provide for induced innovation in project design and an enabling environment for budget reprioritisation. These programmes include the Presidential Lead Projects and a budgeting exercise based on RDP criteria.

3.1 Presidential Lead Projects

The Presidential Lead Projects (PLP) have been identified within the RDP as an attempt at instituting a different model of development and practice distinct from the past. The PLP provide for learning from practice and a redefinition of the major parameters of development. In rural development the PLPs include rural water provision, land restitution, pilot land reform, redistribution and small-scale farmer development. The energy issue is, therefore, going to feature quite prominently in the implementation of these programmes. For example, there is a push right now to prioritise the electrification of rural schools and clinics as support to the PLPs on primary health care and the culture of learning programmes.

3.2 Orientating the Budgetary Process

The orientation of the budget towards meeting RDP objectives is the other pillar of redefining the major parameters of development. One of the benefits of embarking on a review and reorientation of the budgetary process is that it injects a strategic management intervention.

Such strategic management intervention also provides the opportunity to transform and reprioritise the State's delivery of services. Thus, for example, those departments working on rural development and energy, say, would need to indicate how their current budgets are in line with the objectives of the RDP. In light of this it would be possible from a "zero-base" to re-orientate delivery of service such as energy in rural areas.

4 IMPLEMENTING THE RDP

4.1 The Sectoral Task Teams

The RDP is currently being implemented through the line departments managing the various Presidential Lead Projects. These projects have been grouped by sector and each sector has a task team co-ordinating and monitoring progress according to plan. The task teams are in the areas of urban, human resources, local government and rural development.

4.1.1 Urban development

The Urban Development Task Team is currently working on "An Investment Framework for Urban Infrastructure" document which goes into a fair amount of detail on how an investment programme on urban renewal is going to be managed. An urban investment programme will also have as a major component the provision of electricity for example, in those not currently covered.

Given the fact that relative to the needs, the level of resources available from the RDP Fund are not sufficient to cover all needs it is critical at this stage that access to capital markets at

favourable rates be facilitated. This will involve institutional changes and innovative reorganisation of metropolitan local government financing structures.

4.1.2 Human Resources Development

Within the field of human resource development, the task team responsible is busy engaged in detailing a capacity building element within all programmes and ensuring that this does in fact take place. Although capacity building is broadly accepted at the level of principle, its operationalisation within the fields of energy and rural development, for example, has still to take place.

4.1.3 Local Government

As far as local government is concerned, the thrust to the Local Government or Masakhane Campaign is to build on agreements forged at the Botshabelo Housing Summit establishing new partnerships between communities and local authorities concerning payment for services and their delivery. In this context, models on urban and rural local government are evolving and in the final stages of completion.

4.1.4 Rural Development

The Rural Development Task Team, on the other hand, has produced a framework strategy document that seeks to integrate a lot of other initiatives being undertaken by various departments and other agencies in the sector. Co-ordination mechanisms, the need for learning from Presidential Lead Projects, employment creation, capacity building and the importance of rural local government are some of the themes covered in the document.

4.2 Lead Projects Management

A Programme Management Unit based at the RDP National Office has the responsibility of appraising new projects and the monitoring and evaluation of those under implementation. Project implementation as noted above is through the various line departments who as budget holders have to submit progress reports to the Programme Management Unit which in turn is answerable to the Programme Steering Committee.

4.3 Impact of RDP Policy on the Provision of Energy Services in Rural Areas

As noted above the PLPs have induced the need for accelerating the provision of energy and electrification of rural areas. There is now a host of proposals and funding for this area of work. These efforts reinforce current initiatives such as the Plant for Life etc and attest to the fact that the RDP policy framework provides the point of departure in which to situate such.

Therefore, the impact of RDP policy has been to provide a conceptual and operational context and rationale for advancing the debate on energy in rural development. By positioning it as a basic need and a prerequisite for development, the RDP framework is actually an advance on previous approaches. In this way it is possible to prioritise the issue as a developmental objective.

5 IMPLICATIONS OF RDP POLICY FOR THE ENERGY AND RURAL DEVELOPMENT SECTOR

Therefore, the implications of RDP policy for the energy and rural development sector are as follows :

- Evolving Institutional frameworks and arrangements can now be unpacked to provide for energy provision in rural areas as a priority;
- This provides for consensus building and broader participation in policy formulation;
- The department of Mineral and Energy Affairs, for example, is currently engaged in consultation in the drafting of a new Energy policy within the context of the RDP,
- This policy will call for new institutional arrangements such as the formation of an implementing agency for new and renewable energy technologies generally and in the rural sector in particular;
- Over the next five years it should be possible to accelerate the provision of energy in rural areas over and above current efforts from both state or local resources and also from external ones.
- External resources may include, for example, those flowing from the country's accession to the Framework Convention Climate Change (FCCC) where the Global Environmental Facility (GEF) is a major funding mechanism.

PAPER 5
Some ideas on the way forward

Ilne-Mari Hofmeyr

1 INTRODUCTION

The objective of this paper is to explore how to maximise the impact of the workshop. Open Session 10 of the workshop event will provide the opportunity to discuss the options presented and structure a way forward.

The workshop covers priority energy and rural development issues with regard to policy and research. The aim has been to have a broad spectrum of participation, and to arrive at a number of implementable conclusions. Making the most of the workshop could therefore be pursued by *establishing potentially useful links between participants* (and/or sectors represented), *disseminating the workshop conclusions* to the broader rural development community, and ensuring the *recommendations are 'taken-up'* by the key players in the energy and rural development arena - most of whom are represented at the workshop.

A further consideration is however, the extent of rural-end-user and development organisation representation at this workshop, which has inevitably been limited. *Feedback from the 'rural-energy-end-user'* on the workshop conclusions could therefore play an important part in taking this initiative forward.

Also, since policy development and implementation are ongoing processes requiring continual revision and updating, a system whereby there is *a flow of information between the rural-end-user and the policy maker, supplier, development agency, funder and the research establishment, in an ongoing way,* could play a vital role in supporting an improvement in the record of energy service delivery in rural areas.

The following sections suggest potentially useful way forward ideas for discussion. The appendix provides examples of networks and post-workshop follow-up actions from which useful aspects could be extracted.

2 FORMALISING CONTACTS BETWEEN PARTICIPATING SECTORS

Suggestions for formalising links between players involved in the policy process - primarily researchers, policy makers and implementers is discussed in Paper 2 (Gandar) and linkages between different researchers, and researchers and funders, are discussed by Thom in Paper 3.

(It is worth noting Appendix Model C in this respect. Urban sector research and development organisations involved in education and policy development have set-up a structured network to: avoid overlap, encourage the exchange of ideas, focus on common problems, plan research agendas, maximise and/or share resources etc.)

An important area of cooperation not addressed to any significant extent in the pre-workshop papers or workshop sessions, is that between energy and the various line departments and other sectors involved in rural development - and represented at this workshop.

One of the highlighted pitfalls for a lack of success in improving energy service delivery in rural areas, is the low political status of the energy sector (Gandar, Paper 2). The RDP, supported by the Rural Development Task Team (RDTT), represents perhaps the most integrated rural development organisation, yet energy is not represented, either on a Departmental level or amongst the civil bodies 23 Feb 1995). Departments represented on the RDTT include: Constitutional Development; Agriculture; Water Affairs and Forestry; Housing; Education; Land Affairs; Public Works; Transport; Health; State expenditure; Welfare; Trade and industry; and Posts and Telecommunications (RDP/RD: Annexure B, 1994). Energy has an important input into a number if not all of these departments. Civil bodies represented include: The National Rural Development Forum; National Land Committee; the Rural Foundation; SANCO, and Mvula Trust (pers comm Diana Callear).

Open Session 10, objective i: Consider this and other options for improving links between the energy and other sectors & structure a way forward

3 TAKING THE WORKSHOP INFORMATION AND CONCLUSIONS FURTHER

The workshop includes 10 'open' and 'workshop' sessions with a total of 21 objectives. Conclusions that arise out of these will in certain instances lead directly to implementation by being taken-up by those participants who have a mandate. For example, future research undertakings are likely to be influenced by the research priorities identified. The White Paper on energy will also include some conclusions from this workshop and as such will be a vehicle for advocacy. Other than that, workshop information and conclusions will be taken by participants back to their 'home' organisations. In total this makes for an uncoordinated and ad-hoc process.
A more thorough approach should be considered: in the first instance to ensure that the post-workshop document reaches the 'broader development community', and secondly, that recommendations are 'taken-up' by key players in the energy and rural development arena.

3.1 Disseminate the workshop information to the 'broader rural development community'

To incorporate the broader development community in the workshop initiative and the results thereof, target groups would be rural communities, the rural development sector, central state organisations and institutions.

In particular, considering the limited rural-end-user representation, a follow-up process should be considered 'to reach those who were not at the workshop, and take further down to the roots'. (Appendix Model A). Many of the suggestions in support of information dissemination discussed in Section 5, could be applied here.

Open Session 10, objective ii: Consider the value/viability of a process for disseminating workshop information and structure a way forward.

3.2 Workshop 'conclusion advocacy' to key decision makers

Conclusion advocacy would have to incorporate specific material directed at key decision makers in the RDP, RDTT, line departments, and amongst funders, research institutions, NGOs an CBOs, so that, where applicable, recommendations will be considered, piloted

and/or implemented. This is particularly important considering 'the danger of rural energy issues being submerged under concerns of the larger energy industries' (Gandar, Paper 2) and the low political status of energy in relation to other sectors (Section 2).

Open Session 10, objective iii: *Consider the viability/value of conclusion advocacy structure a way forward*

4 FEEDBACK ON THE CONCLUSIONS FROM THE RURAL ENERGY-END-USER

Another level of interaction, that may add value to this initiative in certain instances, would be to obtain feedback from the ground on the workshop conclusions, particularly considering the limited rural-end-user representation at the workshop. Thom in (Paper 3) discusses the importance of community participation in the identification of research priorities and suggests a process for consultation. This could also be applied to other conclusions.

Appendix 'Model A' gives some details of the approach, mechanisms used, and activities of a comprehensive follow-up process undertaken after the 'Womens' Health Conference: health in our hands' (Dec 1994) to consult communities and get feed back over broad policy ideas.

Open Session 10, objective iv: *Consider the value/viability of getting feed-back from the ground on workshop conclusions and structure a way forward.*

5 A RURAL ENERGY NETWORK

Another way forward could be to: combine the information dissemination (Section 3) and feedback (Section 4) processes and set-up a structure, that encourages a network of information exchange between the rural-end-user and the those involved/implicated in rural development and energy service delivery.

Suggestions of cooperative structures and information flows between researchers and policy makers are discussed in the pre-workshop synthesis papers and in the 'open' and 'workshop sessions'. The motivation for linking energy end-users to these structures and other areas of cooperation (where energy information to and from rural-energy-end-users could be an important element in facilitating an improved energy service delivery to rural communities), are discussed below:

1. Just as the energy sector has low status within the development arena, so to within communities. Energy is not high on the agenda of development needs. Broader information dissemination to rural communities could play a valuable role in extending their energy knowledge and capacity with regard to:
   - energy-use safety and efficiency
   - creating greater awareness of opportunities that exist for addressing problems (Thom)
   - stimulating community organisation around energy, or energy representation on other community bodies
   - stimulate energy issues being taken-up in other community networks

2. There is widespread agreement on the establishment of a planning and advisory body on energy, and options are being developed for the energy white paper. A network that

includes the 'broader development community' could be an important vehicle for consultation.

3. A network could play a part in supporting 'strategies to aid energy provision and overcome end-user problems' (Objective iv, Workshop Session 5).

3. For a successful policy process, there is a need for planning and policy to reviewed on a continual basis (Gandar Paper 2). A network could be useful in including energy-end-users in the review process.

4. The need for monitoring standards highlighted by Thom (Paper 3): a network could play a role in monitoring standards of provision etc.

5. A network could provide support for end-user data collection - for example fuel-use trends.

6. Thom identifies CBOs as research institutions (Paper 3) - yet time and communication constraints makes access to, and consultation with, CBOs difficult. Also generally rural energy researchers are not based close to areas being researched (Thom, Paper 3). A network structure could be a way of linking the community to 'energy research planning' (as discussed in Objectives of Workshop Session 9).

7. In the long term, a network could facilitate the identification of implementation pilot projects and help in research project targeting, amongst other functions.

Open Session 10, objective v: *Consider the value and viability of developing an energy network & structure a way forward.*

6 CONCLUSION

Suggested processes discussed above are as follows:

- improve the linkages between the energy and other sectors
- disseminate the workshop conclusions to the broader rural community
- workshop conclusion advocacy amongst key decision makers
- obtain feedback from rural communities on the workshop conclusions
- establish a rural energy network

The objectives of Open Session 10 are, in each case, to consider the value and viability of the options suggested (as well as any other appropriate ways of making the most of the workshop initiative), and to structure a way forward.

APPENDIX to PAPER 5: Examples of networks and follow-up actions

Model A: (pers comm Barbara Klugman)

A follow-up process undertaken after a health sector policy workshop which institutionalised taking the workshop conclusions into the broader health sector and getting a report back.

Goals:
- to consult and get feed back over broad policy ideas
- to reach those who were not at the workshop and take further down to the roots

Approach and mechanisms
- narrow down issues to areas where change is expected
- develop national communication strategy
- facilitate local organisation links
- target already existing organisations
- go via larger forums and organisations with strong rural base

Structure and activities
- reference groups representing target concerns & investigating mechanisms for interaction
- provincial organisations: given issues and tasks and instructed on processes
- national leaders meetings

Model B: Farming Systems Research and Extension Association / Network (FSR-E) (pers comm Ted Stitwell)

Non-profit organisation covering east and southern Africa. Offices and permanent secretariat in Swaziland from which information distributed. About 600 members - individuals not organisations to prevent politics and vested interests, and a mailing list of over a thousand.

Aims:
- to develop human capital and to improve rural livelihoods
- initiate, facilitate and improve FSR-E networking
- contribute to sustainable agriculture and rural development
- serve as operational and academic forum

Main function: exchange ideas and disseminate information - via a news letter, research bulletin and data base. Other: Associate meetings, support or organise workshops and seminars, and a regional conference every 18 months or so.

Spin-offs and achievements: Share knowledge, become more aware of methodologies and technologies, offer platform and an opportunity for members to publish and present. Operate as a vehicle through which people can be put in touch with each other according to particular need, e.g. facilitated setting-up smaller, specialised group.

Model C: Urban sector network (pers comm Jacqui Boulle)

Initially loose arrangement initiated 1988 at a conference in 1988, and formalised at the recent conference 18 months ago.

Opened national office - private and foreign funding.
9 participating organisations e.g. DAG and Planact, each currently fund own participation.
Main areas of cooperation and coordination projects: education and policy development.

Structure:
- national board: directors of participating organisations, meet every two months
- focus and interest groups: discuss key debates and initiate joint ventures - e.g. housing and policy; education and training, meet every two to three months - depending on the project/according to need
- annual conference: funded each year by different funder

Key benefits:
- being able to coordinate efforts
- make greater impact and influence on national policy as a group of organisations - particularly on policy debates, input into national a lot stronger
- organisations provincially based get a chance to see and discuss issues within a national perspective - get out of narrow focus
- able to initiate projects that have a wider benefit and area of influence - projects with national application - e.g. A data base gets national use - benefit other groups - share information
- where duplication can say which organisation best take on work, able to rationalise and share resources, apply for joint funding
- establish a precedence in terms of projects - enriches what's possible

APPENDIX C

Final participant list

APPENDIX C: Final participant list

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